## BLACK & VEATCH Waste Science, Inc.

400 Northridge Road, Suite 350, Atlanta, Georgia 30350, (770) 594-2500, Fax: (770) 587-2930

US EPA -- Region IV Site Inspection Prioritization Work Assignment No. 12

BVWS Project 52012.523 November 22, 1995

Mr. Robert Jourdan Chief, North Superfund Remedial Branch U.S. Environmental Protection Agency 345 Courtland Street, NE Atlanta, Georgia 30365

Subject: Final Site Inspection Prioritization

Metal Resources, Inc.

Loudon, Loudon County, Tennessee

EPA ID TND991279746

Dear Mr. Jourdan:

Enclosed please find one copy of the Final Site Inspection Prioritization for Metal Resources, Inc. in Loudon, Loudon County, Tennessee. If you have any questions, please contact me at 404/43-2320.

Very truly yours,

BLACK, & VEATCH Waste Science, Inc. Salma Milliam ; Miran for

Victor Blix

Project Manager

SW Enclosures

cc: Doug Thompson, EPA PO, w/o enclosures Deborah Davidson, EPA CO, w/o enclosures Earl Bozeman, EPA WAM, w/o enclosures



## BLACK & VEATCH Waste Science, Inc.

2300 Clayton Road, Suite 1280, Concord, California 94520-2100, (510) 246-8010, Fax: (510) 246-8082

U.S. Environmental Protection Agency Metal Resources, Inc. Work Assignment 12 BVWS Project 52012.523 April 10, 1995

Mr. Narindar Kumar, Chief Site Assessment Section U.S. Environmental Protection Agency 345 Courtland Street, NE Atlanta, Georgia 30365

Subject: Site Inspection Prioritization

Metal Resources, Inc.

Loudon, Loudon County, Tennessee

EPA ID TND991279746

Dear Mr. Kumar:

BLACK & VEATCH Waste Science, Inc. (Black & Veatch) has been tasked by the U.S. Environmental Protection Agency (EPA) to conduct a Site Inspection Prioritization for the Metal Resources, Inc. (Metal Resources) site (the site) in Loudon, Loudon County, Tennessee. In accordance with the scope of work, a preliminary Hazard Ranking System (HRS) score was prepared to determine the need for future activities at the site.

The site is located on Highway 2 North in Loudon, Tennessee in the Blair Bend Industrial Park (Ref. 1, p. 6). From approximately 1981 to 1990, Metal Resources refined scrap aluminum at the site (Refs. 2, p. 1; 3). Prior to 1981, the site was undeveloped farm and forest land (Ref. 2, p. 1). Metal Resources filed a Resource Conservation Recovery Act (RCRA) Part A application for the site in 1981, but withdrew the permit in 1982 after determining that it did not generate hazardous materials (Ref. 1, p. 1). Metal Resources, Inc. ceased operations at the site in 1990 and moved its facilities to a new site located approximately 0.5 mile south of the original location (Ref. 4, p. 5). Based on observations made during an offsite reconnaissance conducted on February 5, 1995, by Black & Veatch personnel, the site is currently an unoccupied, vacant lot with no indications of past activities evident (Ref. 4, p. 6).

On November 30, 1983, an inspection by the Tennessee Department of Health and Environment, Division of Solid Waste Management (DSWM) concluded that no hazardous wastes were generated, treated, or stored at the site as the result of refining operations (Ref. 1, p. 1). A later visit to the site by DSWM on June 14, 1984, reported that due to the relatively recent start date of Metal Resources and the lack of a past history of development, this site does not fall under the RCRA program (Ref. 2, p. 1). Available file material does not indicate that environmental samples were collected during the inspections conducted at the site. File material does not indicate whether any uncontrolled spills occurred at the site.

Potable water within a 4-mile radius of the site is supplied by surface water along with municipal springs and private groundwater wells (Ref. 4, pp. 9, 11, 13, 15). Wells in the area are typically completed in the fractured regolith surficial aquifer (Refs. 3, p. 2; 4, p. 13). There are two municipal drinking water springs within 4 miles of the site: the Piney Utilities spring, which is located 1.75 miles south of the site and provides water to approximately 2,870 people, and the Loudon City Water System (LCWS) spring located 3.5 miles west of the site, which serves approximately 584 people (Refs. 4, pp. 11, 13; 5; 6). LCWS also obtains potable water from a surface water intake located on the Tennessee River (Ref. 4, p. 13). The nearest private well is located approximately 1.5 miles south of the site (Ref. 5). The estimated number of people using private wells and springs for drinking water was based on a house count from topographic maps of areas not serviced by municipal water systems (Refs. 5; 6). The estimated total population using drinking water derived from municipal springs and private wells within a 4-mile radius of the site is radially distributed as follows: 0 - 0.25 mile, 0 persons; 0.25 - 0.50 mile, 0 persons; 0.50 - 1 mile, 0 persons; 1 - 2 miles, 3,010 persons; 2 - 3 miles, 231 persons; 3 - 4 miles, 1,092 persons (Refs. 4, pp. 9, 11, 13, 15; 5; 6).

Surface water runoff from the site flows overland approximately 2,000 feet west before entering the Tennessee River at Watts Bar Lake (Tennessee River Mile Marker 592) (Ref. 5). Flow continues west along the Tennessee River for the remainder of the 15-mile surface water pathway (Ref. 5). The Loudon City Water System operates a surface water intake located on the opposite bank of the Tennessee River directly across from the probable point of entry (Refs. 4, p. 13; 5). This surface water intake provides

water to approximately 5,258 people (Refs. 4, p. 13; 6). No other surface water intakes are located along the surface water pathway. The flow rate of the Tennessee River at Watts Barr Lake varies between 300 and 1,000 cubic feet per second (Ref. 7). The Tennessee River at Watts Bar Lake is used for commercial fishing and has an annual yield of approximately 55,500 pounds (Ref. 8). The site is estimated to reside within the 500-year floodplain of the Tennessee River (Ref. 9). The habitats of the federally endangered pink mucket mussel (*Lampsilis abrupta*) and the federally threatened snail darter (*Percina tanasi*) have been identified along the 15-mile surface water pathway (Ref. 10, pp. 5, 6). No wetlands have been identified along the 15-mile surface water pathway (Refs. 5; 10, p. 5).

The estimated population within a 4-mile radius of the site is 8,197, and is radially distributed as follows: 0 - 0.25 mile, 58 persons; 0.25 - 0.50 mile, 135 persons; 0.50 - 1 mile, 1,067 persons; 1 - 2 miles, 2,254 persons; 2 - 3 miles, 5,001; 3 - 4 miles, 928 persons (Ref. 11). The nearest residence is located approximately 0.75 mile south of the site (Ref. 5). It is estimated that fewer than 100 persons were employed at the site during its operational years. The site is currently unfenced and easily accessible; however, public use of the site for recreational or other purposes is unlikely (Ref. 4, p. 6). No wetlands or endangered or threatened species have been identified within the 4-mile radius of the site (Ref. 5).

Due to the low number of pathway targets and low overall site score, no further action is recommended at the Metal Resources, Inc. site. Attached are all references used during this evaluation.

If you have any questions or comments, please contact me at (510) 246-8010 or Victor Blix at (404) 643-2320.

Sincerely,

BLACK & VEATCH Waste Science, Inc.

Jon Erskine Site Geologist

skr Enclosure

#### **REFERENCES**

- 1. State of Tennessee, Department of Public Health, Division of Solid Waste Management, Potential Hazardous Waste Site Preliminary Assessment Worksheet, Metal Resources, Inc., TND991279746, November 30, 1983.
- 2. Davis, Kenneth R., State of Tennessee, Department of Public Health, Division of Solid Waste Management, Office Correspondence, June 14, 1984. Subject: Metal Resources, Inc., TND991279746.
- 3. NUS Corporation, Draft Screening Site Inspection, Phase 1, Metal Resources, Inc., EPA ID No. TND991279746, March 1, 1990.
- 4. Erskine, Jon, BLACK & VEATCH Waste Science, Inc., Logbook for Documentation of Metal Resources, Inc. Site Visit, February 5-7, 1995.
- 5. U.S. Geological Survey, 7.5 minute series Topographic Quadrangle Maps of Tennessee: Cave Creek 1968 (Photorevised 1989); Philadelphia 1974; Lenoir City 1968 (Photorevised 1986); Loudon 1952 (Photorevised 1984); scale 1:24,000.
- 6. U.S. Department of Commerce, Bureau of the Census, <u>1990 Census of Population and Housing Summary Population and Housing Characteristics</u>, <u>Tennessee</u>, 1990 CPH-1-44, August 1991, p. 63.
- 7. U.S. Geological Survey, <u>Water Resources Data, Tennessee Water Year 1993</u>. Water-Data Report TN-93-1 (Nashville, Tennessee 1994).
- 8. Tennessee Wildlife Resources Agency, <u>Fisheries Report</u>, 94-14, 1993 Commercial Fishing Report, March 1994.
- 9. U.S. Department of Housing and Urban Development, Flood Insurance Rate Map: Town of Loudon, Tennessee, Loudon County.
- 10. ERCE, Report of Survey For: Threatened and Endangered Species, Wetlands, Stream Identification at a Proposed Solid Waste Landfill Site, Blair Bend Industrial Park, Loudon County, Tennessee, December 1991.

11. U.S. Environmental Protection Agency, <u>Graphical Exposure Modeling System</u> (GEMS) Data Base. Compiled from U.S. Bureau of the Census data, 1983.

# CONFIDENTIAL Hazard Ranking System Preliminary Score

for

METAL RESOURCES, INC. Loudon, Loudon County, Tennessee EPA ID TND991279746

The preliminary HRS score for the Metal Resources, Inc. site was calculated using the Site Inspection Worksheets. Pathways evaluated include groundwater migration, surface water migration, soil exposure, and air migration. Reportedly, no hazardous wastes were generated, treated, stored, or disposed at the site. Furthermore, file material does not indicate the presence of any hazardous substance at the site at any time. In addition, no environmental samples have been collected at the site. Therefore, due to the lack of data from the site, Maximum Waste Characteristics were used to evaluate each pathway. A Hazardous Waste Quantity (HWQ) factor value of 10 was assigned for all pathways based on the total area of the site (approximately 5 acres).

The groundwater migration pathway HRS score is based on an assumed observed release to the fractured regolith aquifer underlying the site. An observed release was assumed to evaluate worst case conditions at the site. Non-karst target values were used for scoring purposes. There are two municipal springs located within 4 miles of the facility; the Piney Utilities spring, which is located 1.75 miles south of the site and provides water to 2,870 people, and the Loudon City Water System spring, which is located 3.5 miles west of the site and provides water to an estimated 584 people. Potential private groundwater users were determined based on a house count of areas not serviced by municipal water. Approximately 4,333 people are estimated to obtain water from private wells and springs within the 4-mile radius. Low target values resulted in a low groundwater pathway score.

The surface water migration pathway HRS score was based on a potential release and low target values derived from downstream populations, sensitive environments, and recreational fishing areas. The location of the probable point of entry along the Tennessee River was assumed based on the area's topographic features. However, other probable points of entry are also likely due to drainage impediments such as roads and sewers within the city of Loudon. The City of Loudon Water System obtains its water solely from one surface water intake located on the opposite bank of the Tennessee River, directly across the assumed probable point of entry.

The soil exposure pathway was evaluated based on an assumed release to surficial soils. The pathway score was limited by the lack of a resident population and low nearby population target values.

The air migration pathway was scored based on potential to release. Approximately 8,197 people reside within 4 miles of the site. No wetlands or designated threatened or endangered species have been specifically identified within a 4-mile radius of the site.

Due to low target values and a low overall site score, no further action is recommended at the site. An observed release to surface water scenario was not scored due to the low likelihood of runoff reaching the Tennessee River. The site is surrounded by roads, gas stations, and large factories, which would alter the natural direction of runoff and decrease the probability of runoff reaching the river. An observed release to surface water would elevate the surface water pathway score and slightly increase the overall site score; however, the overall site score would still be below 28.5 (16.5). Due to the low sensitivity of the site score to an observed release to surface water, and the difficulty of directly attributing sample results to the site given its industrial setting, sampling is not recommended at the site.

#### HRS SCORING SUMMARY

 $S_{gw} = 14.29$   $S_{sw} = 0.69$   $S_{soil} = 0.003$  $S_{air} = 2.06$ 

OVERALL SCORE = 7.23

Site Name Mo

Metal Resources, Inc.

Location:

Loudon, Loudon County, Tennessee

## GROUND WATER MIGRATION PATHWAY SCORESHEET

Facto	or Categories and Factors	Maximum Value	Value Assign	ned
Liklii	nood of Release			
l	Observed Release	550	550	
2.	Potential to Release			
	2a. Containment	10	10	
	2b Net Precipitation	10	6	
	2c. Depth to Aquifer	5	3	
	2d. Travel Time	35	15	
	2e. Potential to Release			
	[lines $2a \times (2b + 2c + 2d)$ ]	500	240	
3	Liklihood of Release (higher of lines 1 and 2e)	550		550
Wast	e Characteristics			
4.	Toxicity/Mobility	a	10,000	
5.	Hazardous Waste Quantity	a a	10	
6.	Waste Characteristics	100		18
7.	Nearest Well	50	5	
8	Population	30		
0	8a. Level I Concentrations	b	0	
	8b. Level II Concentrations	b	0	
	8c. Potential Contamination	b	109.1	
	8d. Population (lines 8a + 8b + 8c)	. b	109.1	
9.	Resources	5	5	
10.	Wellhead Protection Area	20	0	
11.	Targets (lines $7 + 8d + 9 + 10$ )	b		119.1
Gro	und Water Migration Score for an Aquifer			
12.	Aquifer Score			
	[(lines 3 x 6 x 11)/82,500]c	100		14.29
Gro	und Water Migration Pathway Score			
13.	Pathway Score (SGW), (highest value from line 12 for all aquifers evaluated)e	100		14.29

a Maximum value applies to waste characteristics category

b Maximum value not applicable

e Do not round to nearest integer

Site Name Metal Resources, Inc.

Location: Loudon, Loudon County, Tennessee

#### SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT SCORESHEET

#### **Drinking Water Threat**

Facto	or Categories and Factors	Maximum Value	Value Assigned	i
Likli	hood of Release			
1.	Observed Release	550	0	
2	Potential to Release by Overland Flow			
	2a. Containment	10	10	
	2b. Runoff	25	11	
	2c. Distance to Surface Water	25	9	
	2d. Potential to Release by Overland Flow			
	[lines $2a \times (2b + 2c)$ ]	5()()	200	
3	Potential to Release by Flood			
	3a. Containment (Flood)	10	10	
	3b. Flood Frequency	50	7	
	3c. Potential to Release by Flood			
	(lines 3a x 3b)	500	70	
4.	Potential to Release			
	(lines $2d + 3c$ , subject to a maximum of 500)	500	270	
5	Liklihood of Release (higher of lines 1 and 4)	550		270
Wast	te Characteristics			
6.	Toxicity/Persistence	a	10,000	
7	Hazardous Waste Quantity	a	10	
8.	Waste Characteristics	100		18
Targ	ets			
9	Nearest Intake	50	0	
10	Population			
	10a. Level I Concentrations	b	()	
	10b. Level II Concentrations	b	0	
	10c. Potential Contamination	þ	5.2	
	10d. Population (lines 10a + 10b + 10e)	h	5.2	
11.	Resources	5	5	
12.	Targets (lines $9 + 10d + 11$ )	ħ		10.2
Drin	nking Water Threat Score			
13.	Drinking Water Threat Score			
	[(lines $5 \times 8 \times 12)/82,500$ ], subject to a maximum of 100)	100		0.6

Site Name:

Metal Resources, Inc.

Location:

Loudon, Loudon County, Tennessee

# SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT SCORESHEET (CONTINUED)

#### **Human Food Chain Threat**

Facto	or Categories and Factors	Maximum Value	Value Assigno	ed
Liklil	hood of Release			
14.	Liklihood of Release (same value as line 5)	550		270
Wast	e Characteristics			
15.	Toxicity/Persistence/Bioaccumulation	a	51:+08	
16.	Hazardous Waste Quantity	a	10	
17.	Waste Characteristics	1000		180
Targo	ets			
18.	Food Chain Individual	50	()	
19.	Population			
	19a. Level I Concentrations	b	0	
	19b. Level II Concentrations	b	0	
	19e. Potential Contamination	b	()	
	19d Population (lines 10a + 10b + 10c)	ь	. 0	
20.	Targets (lines 18 + 19d)	þ		0
Hun	nan Food Chain Threat Score			
21.	Human Food Chain Threat Score [(lines 14 x 17			
	x 20)/82,500], subject to a maximum of 100)	100		()

Site Name Metal Resources, Inc.

Location: Loudon, Loudon County, Tennessee

# SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT SCORESHEET (CONTINUED)

#### **Environmental Threat**

Facto	or Categories and Factors	Maximum Value	Value Assigned	
Liklil	nood of Release			
22	Liklihood of Release (same value as line 5)	550		270
Wast	e Characteristics			
23.	Ecosystem Toxicity/Persistence/Bioaccumulation	a	5E+08	
24.	Hazardous Waste Quantity	a	10	
25.	Waste Characteristics	1,000		180
Targ	ets			
26.	Sensitive Environments			
	26a. Level I Concentrations	ь	()	
	26b. Level II Concentrations	b	0	
	26c. Potential Contamination	b	0.15	
	26d. Sensitive Environments (lines 26a + 26b + 26c)	ь	0.15	
27.	Targets (value from line 26d)	ь		0.15
Envi	ronmental Threat Score			
28.	Environmental Threat Score [(lines 22 x 25 x 27)/			
	82,500, subject to a maximum score of 60)	60		0.09
Surf	ace Water Overland/Flood Migration Component Score for a	a Watershed		
29.	Watershed Scoree (lines 13 + 21 + 28,			
	subject to a maximum score of 100)	100		0.69
Surf	ace Water Overland/Flood Component Score			
30.	Component Score (SSW)e (highest score from line 29 for all			
	watersheds evaluated, subject to a maximum score of 100)	100		0.69

Maximum value applies to waste characteristics category

ь Maximum value not applicable

Do not round to nearest integer

Site Name:	Metal Resources, Inc.
Location:	Loudon, Loudon County, Tennessee

### SOIL EXPOSURE PATHWAY SCORESHEET

### Resident Population Threat

Facto	or Categories and Factors	Maximum Value	Value Assigned
<u>Likli</u>	hood of Release		
1.	Liklihood of Exposure	550	550
Was	te Characteristics		
2.	Toxicity	a	10,000
3.	Hazardous Waste Quantity	a	10
4.	Waste Characteristics	100	18
Targ	ets		
5.	Resident Individual	50	0
6.	Resident Population		
	6a. Level I Concentrations	b	0
	6b. Level II Concentrations	b	0
	6c. Resident Population (lines 6a + 6b)	b	0
7.	Workers	15	<u> </u>
8.	Resources	5	<u> </u>
9.	Terrestrial Sensitive Environments	c	0
10.	Targets (lines $5 + 6c + 7 + 8 + 9$ )	b	0
Resi	dent Population Threat Score		
11.	Resident Population Threat		
	[(lines 1 x 4 x 10)/82,500]	ь	0

Site Name:	Metal Reources, Inc.
Location:	Loudon, Loudon County, Tennessee

## **SOIL EXPOSURE PATHWAY SCORESHEET (continued)**

### Nearby Population Threat

Facto	r Categories and Factors	Maximum Value	Value Assigned	
Liklil	nood of Release			
12.	Attractiveness/Accessibility	100	10	
13.	Area of Contamination	100	20	
14.	Liklihood of Exposure	500		5
Wast	e Characteristics			
15.	Toxicity	a	10,000	
16.	Hazardous Waste Quantity	а	10	
17.	Waste Characteristics	100	1	18
Targe	ets			
18.	Nearby Individual	1 _	1	
19.	Population Within 1 Mile	b	1.3	
20.	Targets (lines 18 + 19)	b	2	.3
Near	by Popuation Threat Score			
21.	Nearby Population Threat (lines 14 x 17 x 20)/(82,500)	b	0.00	)3_
Soil 1	Exposure Pathway Score			
22.	Soil Exposure Pathway Score (Ss), (lines 11 + 21,			
	subject to a maximum score of 100)	100	0.00	)3

a Maximum value applies to waste characteristics category.

b Maximum value not applicable.

c No specific maximum value applies to factor. However, pathway score based solely on sensitive environments is limited to maximum score of 60.

d Do not round to nearest integer.

Site Name:	Metal Resources, Inc
Location:	Loudon Loudon County Tennessee

### AIR MIGRATION PATHWAY SCORESHEET

Factor C	Categories and Factors	Maximum Value	Value Assign	ned
Liklihoo	d of Release			
1. 0	Observed Release	550	0	
2. P	Potential to Release	_		
2	a. Gas Potential to Release	500		
2	b. Particulate Potential to Release	500	0	
2	2c. Potential to Release (higher of lines 2a and 2b)	500	0	
3. L	Liklihood of Release (higher of lines 1 and 2c)	550		500
Waste C	Characteristics			
4. Т	Foxicity/Mobility	a	10,000	
5. F	Hazardous Waste Quantity	a	10	
6. V	Waste Characteristics	100		18
Targets				
7. N	Nearest Individual	50	7	
8. F	Population			
8	Ba. Level I Concentrations	ь	0	
8	Bb. Level II Concentrations	b	0	
8	Be. Potential Contamination	b	6.87	
	3d. Population (lines 8a + 8b + 8c)	b	6.87	
	Resources	5 _	5	
10. S	Sensitive Environments			
	0a. Actual Contamination	с	0	
	Ob. Potential Contamination	С	0	
	0c. Sensitive Environments (lines 10a + 10b)	<b>c</b>	. 0	
П. Т	Targets (lines $7 + 8d + 9 + 10c$ )	ь		18.87
Air Mig	gration Pathway Score			
12. F	Pathway Score (SA)			
[	(lines $3 \times 6 \times 11)/82,500$ ]d	100		2.06

a Maximum value applies to waste characteristics category

b Maximum value not applicable

c No specific maximum value applies to factor. However, pathway score based solely on sensitive environments is limited to a maximum score of 60.

d Do not round to nearest integer

## CONFIDENTIAL

## SITE INSPECTION WORKSHEETS

CERCLIS IDENTIFICATION NUMBER
TND 991279746

L	SITE LOCATION					
SITE NAME: LE	SITE NAME: LEGAL, COMMON, OR DESCRIPTIVE NAME OF SITE					
	Resources I					
•		SPECIFIC LOCATION				
P.O. Box	386 , Blai	r Bend Indus	Trial Park			
CITY			STATE	ZIP CODE	TELEPHONE	
Lorden			TN	37774	11-1	
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OWNER/OPERATOR IDENTIFICATION						
OWNER			OPERATOR			
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ADDRESS					•	
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Concord			</th <th><u> </u></th> <th>94520</th>	<u> </u>	94520	
TELEPHONE	8010				,	



## GENERAL INFORMATION

peratio ctive or ctivities lleged.	nal history. Sta inactive status, that have or m	te the site name , and years of wa ay have occurrence types and pr	e, owner, operations aste generations ad at the site; n	ator, type of fac n. Summarize note whether th	waste treatmer ese activities a	the site and its tions, size of proper it, storage, or dispos re documented or this of the PA and
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# GENERAL INFORMATION (continued)

te Sketch: Provide a sketch of	the site. Indicate all pertin wastes, areas of visible ar es, fields, drainage pattems	ient features of the site nd buried wastes, building s, water bodies, vegetati	and nearby ngs, residences, on, wells, sensitive
Su Rport			·
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#### **GENERAL INFORMATION (continued)**

Source Descriptions: Describe all sources at the site. Identify source type and relate to waste disposal operations. Provide source dimensions and the best available waste quantity information. Describe the condition of sources and all containment structures. Cite references.

#### SOURCE TYPES

Landfill: A man-made (by excavation or construction) or natural hole in the ground into which wastes have come to be disposed by backfilling, or by contemporaneous soil deposition with waste disposal.

Surface Impoundment: A natural topographic depression, man-made excavation, or diked area, primarily formed from earthen materials (lined or unlined) and designed to hold an accumulation of liquid wastes, wastes containing free liquids, or sludges not backfilled or otherwise covered; depression may be wet with exposed liquid or dry if deposited liquid has evaporated, volatilized or leached; structures that may be described as lagoon, pond, aeration pit, settling pond, tailings pond, sludge pit; also a surface impoundment that has been covered with soil after the final deposition of waste materials (i.e., buried or backfilled).

Drum: A portable container designed to hold a standard 55-gallon volume of wastes.

Tank and Non-Drum Container: Any device, other than a drum, designed to contain an accumulation of waste that provides structural support and is constructed primarily of fabricated materials (such as wood, concrete, steel, or plastic); any portable or mobile device in which waste is stored or otherwise handled.

Contaminated Soil: An area or volume of soil onto which hazardous substances have been spilled, spread, disposed, or deposited.

PIIe: Any non-containerized accumulation above the ground surface of solid, non-flowing wastes; includes open dumps. Some types of waste piles are:

Chemical Waste Pile:
 A pile consisting primarity of discarded chemical products, by-

products, radioactive wastes, or used or unused feedstocks.

Scrap Metal or Junk Pile: A pile consisting primarily of scrap metal or discarded durable

goods (such as appliances, automobiles, auto parts, batteries, etc.) composed of materials containing hazardous substances.

Tailings Pile: A pile consisting primarily of any combination of overburden from

a mining operation and tailings from a mineral mining,

beneficiation, or processing operation.

• Trash Pile: A pile consisting primarily of paper, garbage, or discarded non-

durable goods containing hazardous substances.

Land Treatment: Landfarming or other method of waiste management in which liquid wastes or sludges are spread over land and tilled, or liquids are injected at shallow depths into soils.

Other: Sources not in categories listed above.

Except from Preliminal IDENTIAL Resolutions - 3 pages.

For some sites, the manner in which the waste was deposited (e.g., creation of a waste pile) would be a primary defining characteristic and it would be appropriate to score the source type as a waste pile.

S-45

Issue: What are some definitions that can be used to assist in identifying and characterizing the source(s) at a site?

Preliminary Resolution: The following definitions are provided:

Active Fire Area: An area that is presently burning or smoldering and which, without remedial action, will continue to do so intently.

<u>Buried/Below-ground Containers or Tanks</u>: A container or tank the entire surface area of which is situated completely below the surface and which is not visible; however, a buried/below-ground tank may have a small fraction of its associated piping above the surface.

<u>Buried/Backfilled Surface Impoundment</u>: A surface impoundment that has been completely covered with soil after final deposition of waste materials.

Burn Pit: An uncovered area on or on the land surface that was at one time used to burn waste materials or was otherwise significantly inflamed but is not presently burning.

Containers or Tanks: (1) Any stationary device designed to contain an accumulation of waste, which is constructed primarily of non-earthen materials (such as wood, concrete, steel, or plastic) which provides structural support. (2) Any portable device in which waste is stored or otherwise handled.

Contaminated Soil (excluding land treatment): (1) An area of soil that contains concentrations of a hazardous substance significantly above background. Evidence that the substance detected is related to the site must be provided to substantiate use of this descriptor. (2) An area on which available evidence demonstrates that hazardous substances were spilled. Note: somewhat similar to area of observed contamination but without the requirement that the hazardous substance be located within two feet of the surface.

<u>Landfarm/Land treatment</u>: Landfarming or land treatment is a method of waste management in which liquid waste or sludges are spread over land and tilled. It also applies to the shallow infection of liquids. The distinguishing characteristics of landfarms and land treatment facilities is the shallow injection or tilling of the soil.

Landfill: A landfill may be either a cleared area on the ground surface or a man-made or natural hole in the ground, containing wastes. The landfill may have been backfilled with the soil either after or contemporary with the waste disposal, covering the wastes from view. The landfill may have been formed either by excavating the hole or by forming earthen walls around a cleared area. Due to weathering, erosion, and similar phenomena, however, once-

- These resolutions contain site-specific guidance that may or may not apply to other sites. -

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buried wastes in a landfill may become exposed, e.g., partially buried drums. The contents of a landfill may include nearly any or all types of wastes including buried drums.

#### Piles (by type):

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<u>Chemical Waste Pile</u>: A pile consisting primarily of discarded chemical products (whether marketable or not), by-products, or unused feedstocks.

Scrap Metal or Junk Pile: A pile consisting primarily of scrap metal or discarded durable goods such as appliances, automobiles or autoparts, and furniture.

<u>Tailings Pile</u>: A pile consisting primarily of any combination of overburden from a mining operation and tailings from a mineral mining, beneficiation, or processing operation.

<u>Trash Pile</u>: A pile consisting of primarily paper, garbage, or discarded non-durable goods such as food packaging (e.g., 'refuse').

Other: A term reserved for use when a pile of indeterminate origin has accumulated and is shown to contain certain hazardous substances, contaminants, pollutants, or radionuclides.

Surface Impoundment: A natural topographic depression, man-made excavation, berned, or diked area, primarily formed from earthen materials (lined or unlined) which was designed to hold an accumulation od liquid wastes, wastes containing free liquids, or sludges that were not backfilled or otherwise covered. The distinguishing characteristics of a surface impoundment are the emphasis on liquid waste and the general lack of soil cover. Two types of surface impoundments are distinguished: those at which the deposited liquid has evaporated, volatilized, or leached (dry) and those with exposed liquid (other). Synonymous terms include lagoon pond, aeration pit, settling pond, and tailings pond.

S-46 **Issue:** What are examples of 'other' source types?

Preliminary Resolution: Anything not specifically listed or that does not clearly fit into one of the listed source types, e.g., contaminated buildings, contaminated surface water sediments with no identified source, and contaminated equipment. Additional other source types may include: storm drains, dry wells, injection wells, ground water plumes with no identified source, radioactively contaminated equipment, etc. (See also Preliminary Resolution S-48.)

47 Issue: Are seeps and leachate considered sources?

Preliminary Resolution: Seeps and leachate are migration from sources, nor areas of deposition, and thus are not sources for the migration pathways. However, there is a

- These resolutions contain site-specific guidance that may or may not apply to other sites. -

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good probability that the soils beneath seeps and leachate are contaminated. For the purposes of scoring the soil exposure pathway, therefore, seeps and leachate of hazardous substances can be considered observed contamination of the surface.

Seeps and leachate are also useful in attributing observed releases to sources. In some cases, seeps and leachate have been used to establish observed releases by direct observation to ground water and/or surface water.

S-48 **Issue:** Are buildings contaminated with radioactive materials considered sources? If so, what type?

Preliminary Resolution: Yes, they would be in the \*other\* category of sources unless they fit a specific description (e.g., demolished building could be a pile).

S-49 Issue: Within a large source (e.g., landfill), what should be used as the starting point for measuring target distance limits?

Preliminary Resolution: For measuring target distances in pathways, use the source boundaries, which may be established in various ways (e.g., photographs, fill above grade). The exception would be ground water plumes and surface water sediments with no identified source.

- For such ground water plumes, use the center of the observed area of ground water contamination, as specified in Section 3.0.1.1 of the HRS rule.
- For such surface water sediments, if there is a clearly defined direction of flow, use the point of observed sediment contamination that is farthest upstream as specified in Section 4.1.1.2 of the HRS rule. If there is no clearly defined direction of flow, use the center of the area of observed sediment contamination as specified in Section 4.1.1.2 of the rule.

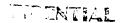
S-50 Issue: How is thickness of cover measured – maximum or minimum?

Preliminary Resolution: For purposes of scoring containment, thickness of cover is measured at the point of minimum thickness. In some cases, cracks may indicate a good place to measure the minimum thickness.

COMPTON

## **GENERAL INFORMATION (continued)**

Source Description: Include description of Table 3-2), surface water (see HRS Table 4-2)	containment per pathway for , and air (see HRS Tables 6-3 :	ground water (see HRS and 6-9).
Commence of the second of the second	$t \sim (1 + 1)$	<u>.</u>
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Hazardous Waste Quantity (HWQ) Calcula and 5-2).	ation: SI Tables 1 and 2 (S	ee HRS Tables 2-5; 2-6,
		•
	1	
,		
		-
Attach additional pages, if necessary	н	WQ =



SI TABLE 1: HAZARDOUS WASTE QUANTITY (HWQ) SCORES FOR SINGLE SOURCE SITES

		Single Source Sites (assigned HWQ scores)							
(Column 1)	(Column 2)	(Column 3)	(Column 4)						
,	}		,						
TIER	Source Type	HWQ = 10	HWQ = 100						
A Hazardous Constituent Quentity	N/A	HWQ = 1 ii Hazardous Constituent Quantity data are complete HWQ = 10 ii Hazardous Constituent Quantity data are not complete	>100 to 10,000 fbs						
B Hazardous Wastestream Quantity	N/A	≤ 500,000 ibs	>500,000 to 50 million lbs						
	Landlill	≤ 6.75 million ft <sup>3</sup>	>6.75 million to 675 million ft <sup>3</sup>						
		≤ 250,000 yd <sup>3</sup>	>250,000 to 25 million yd <sup>3</sup>						
·	Surface impoundment	≤6,750 ft <sup>3</sup> ≤250 yd <sup>3</sup>	>6,750 to 675,000 ft <sup>3</sup> ->250 to 25,000 yd <sup>3</sup>						
	Drums .	≤1,000 drums	>1,000 to 100,000 drums						
C Volum•	Tanks and non-drum containers	≤50,000 galions	>50,000 to 5 million gallons						
	Contaminated soil	≤6.75 million ft <sup>3</sup> ≤250,000 yd <sup>3</sup>	>6.75 million to 675 million ft <sup>3</sup> >250,000 to 25 million yd <sup>3</sup>						
	Pile	≤6,750 ft <sup>3</sup> ≤250 yd <sup>3</sup>	>6,750 to 675,000 ft <sup>3</sup> >250 to 25,000 yd <sup>3</sup>						
	Other	≤6,750 ft <sup>3</sup> ≤250 yd <sup>3</sup>	>6,750 to 675,000 ft <sup>3</sup> >250 to 25,000 yd <sup>3</sup>						
	Landfill	≤340,000 ft²	>340,000 to 34 million ft <sup>2</sup>						
D	Surface impoundment	≤7.8 acres ≤1,300 ft <sup>2</sup> ≤0.029 acres	>7.8 to 760 acres >1,300 to 130,000 ft <sup>2</sup> >0.029 to 2.9 acres						
Ares	Contaminated soil	≤3.4 million ft² ≤78 acres	> 3.4 million to 340 million ft <sup>2</sup> > 78 to 7,800 acres						
	Pile	≤1,300 ft <sup>2</sup> ≤0.029 acres	>1,300 to 130,000 ft <sup>2</sup> >0.029 to 2.9 acres						
	Land treatment	≤27,000 ft <sup>2</sup> ≤0.62 acres	>27,000 to 2.7 million ft <sup>2</sup> >0.62 to 62 acres						

1 ton = 2,000 pounds = 1 cubic yard = 4 druins = 200 gallons

TABLE 1 (CONTINUED)

Single Source (assigned HWQ		Multiple Source Sites		
(Column 5)	(Column 6)	(Column 7) Divisors for	(Column 2)	(Column 1)
HWQ = 10,000	HWQ = 1,000,000	Assigning Source WQ Values	Source Type	HER
>10,000 to 1 million lbs	> 1 million lbs	lbs + 1	N/A	A Hezerdous Constituent Quantity
>50 million to 5 billion lbs	> 5 billion lbs	lbs + 5,000	N/A	B Hazardous Wastestream Quantity
>675 million to 67.5 billion ft <sup>3</sup>	> 67.5 billion ft <sup>3</sup>	ft <sup>3</sup> + 67,500	Landfill	
>25 million to 2.5 billion yd <sup>3</sup> >675,000 to 67.5 million ft <sup>3</sup> >25,000 to 2.5 million yd <sup>3</sup>	> 2.5 billion yd <sup>3</sup> > 67.5 million ft <sup>3</sup> > 2.5 million yd <sup>9</sup>	yd <sup>3</sup> + 2,500 ft <sup>3</sup> + 67.5 yd <sup>3</sup> + 2.5	Surface Impoundment	
>100,000 to 10 million drums	> 10 million drums	drums + 10	Decemb	
>5 million to 500 million gallons	> 500 million gallons	gallons + 500	Drums Tanks and non-drum	C Valume
>675 million to 67.5 billion ft <sup>3</sup> >25 million to 2.5 billion yd <sup>3</sup>	> 67.5 billion ft <sup>3</sup> > 2.5 billion yd <sup>3</sup>	ft <sup>3</sup> + 67,500 yd <sup>3</sup> + 2,500	containers Contaminated Soil	
>675,000 to 67.5 million ft <sup>3</sup> >25,000 to 2.5 million yd <sup>3</sup>	> 67.5 million tt <sup>3</sup> > 2.5 million yd <sup>3</sup>	ft <sup>3</sup> + 67.5 yd <sup>3</sup> + 2.5	Pile	
>675,000 to 67.5 million ft <sup>3</sup> >25,000 to 2.5 million yo <sup>4</sup>	> 67.5 million ft <sup>3</sup> > 2.5 million ya <sup>3</sup>	tt <sup>3</sup> + 67.5 yd <sup>3</sup> + 2.5	Other	-
>34 million to 3.4 billion ft <sup>2</sup> >780 to 78,000 acres	> 3.4 billion ft <sup>2</sup> >78,000 acres	ft <sup>2</sup> + 3,400 acres + 0.078	Landfill	
>130,000 to 13 million ft <sup>2</sup> >2.9 to 290 acres	> 13 million ft <sup>2</sup> > 290 acres	ft <sup>2</sup> + 13 acres + 0.00029	Surface Impoundment	p ·
<ul> <li>340 million to 34 billion ft<sup>2</sup></li> <li>7,800 to 780,000 acres</li> </ul>	> 34 billion (t <sup>2</sup> > 780,000 acres	ft <sup>2</sup> + 34,000 acres + 0.78	Contaminated Soil	Area
> 130,000 to 13 million ft <sup>2</sup> > 2.9 to 290 acres	> 13 million ft <sup>2</sup> > 290 acres	ft <sup>2</sup> + 13 acres + 0.00029	Рìle	
>2.7 million to 270 million ft <sup>2</sup> >62 to 6,200 acres	> 270 million ft <sup>2</sup> > 6,200 acres	ft <sup>2</sup> + 270 acres + 0.0062	Land Treatment	

<sup>1</sup> tran = 2,000 pounds = 1 cubic yard = 4 drums = 200 gallons



#### HAZARDOUS WASTE QUANTITY (HWQ) CALCULATION

For each migration pathway, evaluate HWQ associated with sources that are available (i.e., incompletely contained) to migrate to that pathway. (Note: If Actual Contamination Targets exist for ground water, surface water, or air migration pathways, assign the calculated HWQ score or 100, whichever is greater, as the HWQ score for that pathway.) For each source, evaluate HWQ for one or more of the four tiers (SI Table 1; HRS Table 2-5) for which data exist: constituent quantity, wastestream quantity, source volume, and source area. Select the tier that gives the highest value as the source HWQ. Select the source volume HWQ rather than source area HWQ if data for both tiers are available.

Column 1 of SI Table 1 indicates the quantity tier. Column 2 lists source types for the four tiers. Columns 3, 4, 5, and 6 provide ranges of waste amount for sites with only one source, corresponding to HWQ scores at the tops of the columns. Column 7 provides formulas to obtain source waste quantity values at sites with multiple sources.

- Identify each source type.
- Examine all waste quantity data available for each source. Record constituent quantity and waste stream mass or volume. Record dimensions of each source.
- 3. Convert source measurements to appropriate units for each tier to be evaluated.
- 4. For each source, use the formulas in the last column of SI Table 1 to determine the waste quantity value for each tier that can be evaluated. Use the waste quantity value obtained from the highest tier as the quantity value for the source.
- 5. Sum the values assigned to each source to determine the total site waste quantity.
- 6. Assign HWQ score from SI Table 2 (HRS Table 2-6).

Note these exceptions to evaluate soil exposure pathway HWQ (see HRS Table 5-2):

- The divisor for the area (square feet) of a landfill is 34,000.
- The divisor for the area (square feet) of a pile is 34.
- Wet surface impoundments and tanks and non-drum containers are the only sources for which volume measurements are evaluated for the soil exposure pathway.

SI TABLE 2: HWQ SCORES FOR SITES

Site WQ Total	HWQ Score
0	0
1 <sup>a</sup> to 100	1 <sup>b</sup>
> 100 to 10,000	100
> 10,000 to 1 million	10,000
> 1 million	1,000,000

a If the WQ total is between 0 and 1, round it to 1.

b If the hazardous constituent quantity data are not complete, assign the score of 10.

SI TABLE 3:	WASTE CHARACTERIZATION	WORKSHEET	
Site Name:		References	
Sources:			
1	45		
J		SURFACE WATER PATHWAY	

								SUF	RFACE	WATER	PATHV	/AY				AIR	
SOURCE	HAZARDOUS SURSTANCE	TOXICITY	WA'	TER		OVE	ERLAND/I	FLOOD	MIGRAT	ION		GI	ROUND SURFACE	WATER T	ro R	Pathone	
Jones			GW Mobility (HRS Table 3-8)	To x/ Mobility Value (HRS Table 3-9)	Per (HRS Tables 4-10 and 4-11)	Tox/Per Value (HRS Table 4-12)	Bloac Pot. (HRS Table 4-15)	Tow Persy Bioac Value (HRS Table 4-16)	Ecolox (HRS Table 4-19)	Ecolox/ Pers (HRS Table 4-20)	Ecotox/ Pers/ Bioacc Value (HRS Table 4-21)	Tox/ Mob/ Pera Value (HRS Table 4-26)	Tos/ Mob/ Pers/ Bloacc Value (HRS Table 4-28)	Ecotos/ Mob/ Pers Value (HRS Table 4-29)	Econorio Moby Per/ Bioacc Value (HRS Table 4-30)	Toxicity mobility	
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		1															
	SOURCE	SOURCE HAZARDOUS SUBSTANCE	SOURCE SUBSTANCE TOXICITY	SOURCE HAZARDOUS SUBSTANCE TOXICITY  GW Mobility (HRS Table 3-8)	SOURCE SUBSTANCE TOXICITY  GW Mobility (HRS Table 3-8) 3-9)	SOURCE HAZARDOUS SUBSTANCE TOXICITY  TOXICITY  GW Mobility Value (HRS Table Table 3-8) 3-9)  4-11)	SOURCE HAZARDOUS SUBSTANCE TOXICITY  GW Mobility Value (HRS Tables Table 3-8)  A-10 and Table 4-10 and Table 4-12)	SOURCE HAZARDOUS SUBSTANCE TOXICITY  WATER PATHWAY  TOW Mobility Value (HRS Tables Tables 3-8)  TABLE 3-8)  TOM Mobility Value (HRS Tables 4-10 and 4-11)  TOW Mobility Value (HRS Tables Tables 4-10 and 4-11)  Tow Mobility Value (HRS Tables Tables 4-10)  Table 3-8)  Tow Mobility Value (HRS Tables Tables 4-10)  Tow Mobility Value (HRS Tables Tables 4-10)  Tow Mobility Value (HRS Tables Tables 4-10)  Tow Mobility Value (HRS Tables Tables Tables 4-10)  Tow Mobility Value (HRS Tables Tables Tables 4-10)  Tow Mobility Value (HRS Tables Table	SOURCE SUBSTANCE  TOXICITY  GW GW Mobility Mobility (HRS Table 3-8) 3-9) 4-113 4-12)  TOXICITY  OVERLAND/FLOOD  TOXICITY  TOXI	SOURCE HAZARDOUS SUBSTANCE TOXICITY  Bloac Pot. (HRS. Table	SOURCE SUBSTANCE TOXICITY    ACCORDING SUBSTANCE   TOXICITY   TOXI	SOURCE HAZARDOUS SUBSTANCE TOXICITY  HAZARDOUS SUBSTANCE TOXICITY  TOXICITY  GW MATER PATHWAY  TOXICITY  GW Mobility (HRS Table 3.8)  1	SOURCE SUBSTANCE TOXICITY    HAZARDOUS SUBSTANCE   TOXICITY   TOXI	Name	SOURCE SUBSTANCE  HAZARDOUS SUBSTANCE  TOXICITY  GW Nobility (HRS 1 Table 13.8)  Table 3.8)  TOXICITY  GW Nobility (HRS 1 Table 3.8)  TABLE 3.8)  TOXICITY  GW Nobility (HRS 1 Table 4.12)  TOXICITY  GW Nobility (HRS 1 Table 4.12)  TABLE 4.110  TABLE 4.110  TABLE 4.110  TABLE 4.110  TABLE 4.110  TABLE 4.110  TABLE 4.120  TABLE 4.1	Name	

#### Ground Water Observed Release Substances Summary Table

On SI Table 4, list the hazardous substances associated with the site detected in ground water samples for that aquifer. Include only those substances directly observed or with concentrations significantly greater than background levels. Obtain toxicity values from the Superfund Chemical Data Matrix (SCDM). Assign mobility a value of 1 for all observed release substances regardless of the aquifer being evaluated. For each substance, multiply the toxicity by the mobility to obtain the toxicity/mobility factor value; enter the highest toxicity/mobility value for the aquifer in the space provided.

#### Ground Water Actual Contamination Targets Summary Table

If there is an observed release at a drinking water well, enter each hazardous substance meeting the requirements for an observed release by well and sample ID on SI Table 5 and record the detected concentration. Obtain benchmark, cancer risk, and reference dose concentrations from SCDM. For MCL and MCLG benchmarks, determine the highest percentage of benchmark obtained for any substance. For cancer risk and reference dose, sum the percentages for the substances listed. If benchmark, cancer risk, or reference dose concentrations are not available for a particular substance, enter N/A for the percentage. If the highest benchmark percentage or the percentage sum calculated for cancer risk or reference dose equals or exceeds 100%, evaluate the population using the well as a Level I target. If these percentages are less than 100% or all are N/A, evaluate the population using the well as a Level II target for that aquifer.

	SI TA				SUBSTANCES	(BY	AQUIFER)
ľ		 	 Dakard	Toxidity			

Sample ID	Hazardous Substance	Bckgrd. Conc.	Toxicity/ Mobility	References
	Highest To:	cicity/Mobility		_}

#### SI TABLE 5: GROUND WATER ACTUAL CONTAMINATION TARGETS

Well ID:			Level I	Level II	_ Population Se	orved	Reference	s
Sample ID	Hazardous Substance	Conc. (μg/L)	Benchmark Conc. (MCL or MCLG)	% of Benchmark	Cancer Risk Conc.	% of Cancer Risk Conc.	RID	% of RfD
			Highest Percent		Sum of Percents		Sum of Percents	
Well ID:			Level I	Level II	Population Se	erved	Reference	\$
Sample ID	Hazardous Substance	Conc. (μg/L)	Benchmark Conc. (MCL or MCLG)	% of Benchmark	Cancer Risk Conc.	% of Cancer Risk Conc.	RID	% of RID
			Ulahasi		S., - of		0	
			Highest Percent		Sum of Percents		Sum of	

# GROUND WATER PATHWAY GROUND WATER USE DESCRIPTION

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COMMITTAL

## GROUND WATER PATHWAY WORKSHEET

LI	KELIHOOD OF RELEASE	Score	Type	Refs
1.	OBSERVED RELEASE: If sampling data or direct observation	I	T	ſ
1	support a release to the aquifer, assign a score of 550. Record	* . , . , . ,	}	1
<u> </u>	observed release substances on SI Table 4.			
2.	POTENTIAL TO RELEASE: Depth to aquifer: feet. If	1	İ	
1	sampling data do not support a release to the aquiler, and the site is in karst terrain or the depth to aquiler is 70 feet or less, assign a		) )	
1	score of 500; otherwise, assign a score of 340. Optionally,	1-24c		
1	evaluate potential to release according to HRS Section 3.	J* * *	1 1	
<u> </u>	LR =	555	1	
		<u> </u>	A	
TA	ARGETS			
	Are any wells part of a blended system? Yes No			
l	If yes, attach a page to show apportionment calculations.	1	1	
	ACTUAL CONTANINATION TARGETS: If analytical aridanas		]	
ا.	ACTUAL CONTAMINATION TARGETS: If analytical evidence indicates that any target drinking water well for the aquifer has been		1	
1	exposed to a hazardous substance from the site, evaluate the		[ [	
1	factor score for the number of people served (SI Table 5).			
1	The second secon			
l	Level I: people x 10 =			.
	Level II: people x 1 = Total =			
<u> </u>	POTCHTIAL CONTANUNATION TARGETS, Para-i the min-had			
4.	POTENTIAL CONTAMINATION TARGETS: Determine the number of people served by drinking water wells for the aquifer or overlying			1
	aquifers that are not exposed to a hazardous substance from the		1	Ì
	site; record the population for each distance category in SI Table 6a	209,	1	Į
	or 6b. Sum the population values and multiply by 0.1.	1011		ļ
5.	NEAREST WELL: Assign a score of 50 for any Level I Actual		1	
	Contamination Targets for the aquifer or overlying aquifer. Assign a	j	j	1
	score of 45 if there are Level II targets but no Level I targets. If no	,	}	j
	Actual Contamination Targets exist, assign the Nearest Well score	! "y		1
	from SI Table 6a or 6b. If no drinking water wells exist within 4 miles,	ļ	}	Į
6	assign 0.  WELLHEAD PROTECTION AREA (WHPA): If any source lies :			
0.	within or above a WHPA for the aquifer, or if a ground water	ļ	}	1
	observed release has occurred within a WHPA, assign a score of	_		}
	20; assign 5 if neither condition applies but a WHPA is within 4		- 1	l
	miles; otherwise assign 0.		<u>l</u>	
7.	RESOURCES: Assign a score of 5 if one or more ground water			j
	resource applies; assign 0 if none applies.	Ì	1	I
	Irrigation (5 acre minimum) of commercial food crops or		}	1
	commercial lorage crops	,	. 1	}
	Watering of commercial livestock		1	į
	Ingredient in commercial food preparation	{	}	į
	Supply for commercial aquaculture	ł	}	}
	<ul> <li>Supply for a major or designated water recreation area,</li> </ul>	ļ	}	i
	excluding drinking water use	Ì	1	{
	Sum of Targets T=			
	Sim of largate 1-1	1/9.1		

\* Talk Control of the 
c 1

C-15

## TABLE 3-1 GROUND WATER HIGRATION PATHWAY SCORESHEET

### Factor Categories and Factors

Likelihood of Release to an Aquifer	Haximum Value	Value Assigned
1. Observed Release 2. Potential to Release 2a. Containment 2b. Net Precipitation 2c. Depth to Aquifer 2d. Travel Time	550 10 10 5 35	10 6 3
<ul> <li>Ze. Potential to Release [lines 2a x (2b + 2c + 2d)]</li> <li>3. Likelihood of Release (higher of lines 1 and 2e)</li> </ul>	500 550	240
4. Toxicity/Mobility 5. Hazardous Waste Quantity 6. Waste Characteristics	100	
Targets 7. Nearest Well 8. Population 8a. Level I Concentrations 8b. Level II Concentrations	50 - b -	·
8c. Potential Contamination 8d. Population (lines 8a + 8b + 8c) 9. Resources 10. Wellhead Protection Area 11. Targets (lines 7 + 8d + 9 + 10)	ь _ ь _ 5 _ 20 _ ь .	
Ground Water Higration Score for an Aquifer  12. Aquifar Score [(lines 3 x 6 x 11)/82.500] <sup>c</sup>	100	
Ground Water Higration Pathway Score  13. Pathway Score (Sgw), (highest value from line 12 for all aquifers evaluated) C	100	
and an applies to waste characteristics of the same value not applicable.  CDo not round to nearest integer.		

# TABLE 3-2 CONTAINMENT FACTOR VALUES FOR GROUND WATER MIGRATION PATHWAY

All Sour	ces (except surface impoundments, land treatment, containers, and tanks)	Value
area (i.	of hazardous substance migration from source e., source area includes source and any associated ent structures).	10
No liner	•	10
	nce of hazardous substance migration from source liner, and:	
( <b>a</b> )	None of the following present: (1) maintained engineered cover, or (2) functioning and maintained run-on control system and runoff management system, or (3) functioning leachate collection and removal system immediately above liner.	10
(b)	Any one of the three items in (a) present.	9
(c)	Any two of the items in (a) present.	7
(d)	All three items in (a) present plus a functioning ground water monitoring system.	5
(e)	All items in (d) present, plus no bulk or non- containerized liquids nor materials containing free liquids deposited in source area.	3
area, douremoval s	ce of hazardous substance migration from source ble liner with functioning leachats collection and ystem above and between liners, functioning ter monitoring system, and:	
(f)	Only one of the following deficiencies present in containment: (1) bulk or noncontainerized liquids or materials containing free liquids deposited in source area, or (2) no or nonfunctioning or normaintained run-on control system and runoff management system, or (3) no or normaintained engineered cover.	3

### TABLE 3-2 (Continued)

All Sources (Concluded)	Assigned Value
(g) None of the deficiencies in (f) present.	0
Source area inside or under maintained intact structure that provides protection from precipitation so that neither runoff nor leachate is generated, liquids or materials containing free liquids not deposited in source area, and functioning and maintained run-on control present.	

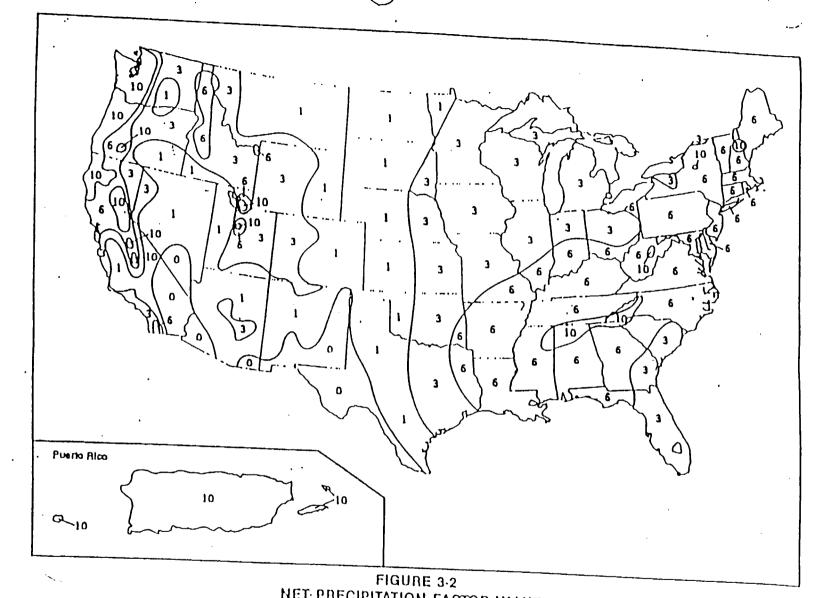


FIGURE 3-2 NET-PRECIPITATION FACTOR VALUES

TABLE 3-5
DEFIN TO AQUIFER FACTOR VALUES

Depth To Aquifer* - (feet)	Assigned Value
Lass than or equal to 25	5
Greater than 25 to 250	<b>3</b>
Greater than 250	1.

Use depth of all layers between the hazardous substances and aquifer. Assign a thickness of 0 feet to any karst aquifer that underlies any portion of the sources at the site.

TABLE 3-6
HYDRAULIC CONDUCTIVITY OF GEOLOGIC MATERIALS

Type of Macerial	Assigned Hydraulic Conductivity (cm/sec)
Clay; low permeability till (compact unfractured till); shale; unfractured metamorphic and igneous rocks	10-8
Silt; loesses; silty clays; sediments that are predominantly silts; moderately permeable till (fine-grained, unconsolidated till, or compact till with some fractures); low permeability limestones and dolomites (no karst); low permeability sandstone; low permeability fractured igneous and metamorphic rocks	10-6
Sands; sandy silts; sediments that are predominantly sand; highly permeable till (coarse-grained, unconsolidated or compact and highly fractured); peat; moderately permeable limestones and dolonites (no karst); moderately permeable sandstone; moderately permeable fractured igneous and metamorphic rocks	10 <sup>-4</sup>
Cravel; clean sand; highly permeable fractured igneous and metamorphic tocks; permeable basalt; karst imestones and dolomites	10-2

<sup>\*</sup>Do not round to nearest integer.

TABLE 3-7
TRAVEL TIME FACTOR VALUES\*

	Thickness of Lowest Hydraulic Conductivity Layer(s) <sup>b</sup> (feet)							
Hydraulic Conductivity (cm/sec)	Greater than 3 to 5	Greacer than 5 to 100	Greater than 100 to 500	Greater Than 500				
Greater than or equal to 10 <sup>-3</sup>	35	35	35	25				
Less than 10 <sup>-3</sup> to 10 <sup>-5</sup>	35	25	15	15				
Less than 10 <sup>-5</sup> to 10 <sup>-7</sup>	. 15	(15)	.5.	5				
Less than $10^{-7}$	5 .	5	1	. 1				

<sup>\*</sup>If depth to aquifer is 10 feet or less or if, for the interval being evaluated, all layers that underlie a portion of the sources at the site are karst, assign a value of 35.

bConsider only layers at lesst 3 feet thick. Do not consider layers or portions of layers within the first 10 feet of the depth to the aquifer.

# SI TABLE 6 (From HRS TABLE 3-12): VALUES FOR POTENTIAL CONTAMINATION GROUND WATER TARGET POPULATIONS

SI Table 6a: Other Than Karst Aquifers

Γ					Population Served by Wells within Distance Category												
	Distance from Site	Рор.	Nearest Well (choose highest)	1 10 10	11 to 30	31 to 100	101 to 300	301 lo 1000	1001 lo 3000	3001 to 10,000	10,001 to 30,000	30,001 10 100,000	100,001 to 300,000	300,001 1 <i>0</i> 1,000,000	1,000,000 to 3,000,000	Pop. Value	Ref.
	0 to $\frac{1}{4}$ mile	-	20	4	17	53	164	522	1,633	5,214	16,325	52,137	163,246	521,360	1,632,455		
1	> \frac{1}{4} to \frac{1}{2} \\ mile		18	2	11	33	102	324	1,013	3,233	10,122	32,325	101,213	323,243	1,012,122		
0	> 1/2 to 1		9	1	5	17	52	167	523	1,669	5,224	16,684	52,239	166,835	522,385		
16	> 1 to 2 miles	 5-	5	0.7	3	10	30	94	294	939	2,939	9,385	29,384	93,845	293,842		
	> 2 to 3 miles		3	0.5	2	7	21	68	212	678	2,122	6,778	21,222	67,777	212,219	2 '	
	>3 to 4 miles	1000	2	0,3	1	4	13	۵ź	(131)	417	1,306	4,171	13,060	41,709	130,596	13/	
•	Nearest	Well =	ŧ.										٠.		Sum =	1091	

# SI TABLE 6 (From HRS TABLE 3-12): VALUES FOR POTENTIAL CONTAMINATION GROUND WATER TARGET POPULATIONS (continued)

SI Table 6b: Karst Aquifers

			<del></del>		Population Served by Wells within Distance Category												
Distan	nce		Nearest Well (choose	1 to	11 to 30	31 to 100	101 10 300	301 to 1000	1001 to 3000	3001 to 10,000	10,001 to 30,000	30,001 to 100,000	100,001 10 300,000	300,001 to 1,000,000	1,000,000 to 3,000,000	Pop. Value	Ref.
from S	Site	Рор.	highest) 20	10	17	53	164	522	1,633	5,214	18,325	52,137	163,246	521,360	1,632,455		
> 1/4 1			20	2	11	33	102	324	1,013	3,233	10,122	32,325	101,213	323,243	1,012,122		
mil	10		20	2	9	26	82	261	817	2,607	8,163	26,068	81,623	260,680	816,227		
) <u>mi</u>	ile to 2		20	2	9	26	82	261	817	2,607	8,163	26,068	81,623	260,680	816,227		
	to 3			2	9	26	82	261	817	2,607	8,163	26,068	81,623	260,680	816,227		
73	10 4	-	20	2	9	26	82	261	817	2,607	8,163	26,068	81,623	260,680	816,227		
	iles		20	+-				<u></u>					_1		Sum =		
Nes	arest	Well :	:														

#### GROUND WATER PATHWAY WORKSHEET (concluded)

WA	STE CHARACTERISTICS		Score	Data Type	Does not Apply
8.	If any Actual Contamination Tar overlying aquifers, assign the c quantity score or a score of 100 Contamination Targets exist, as quantity score calculated for sor ground water.	alculated hazardous waste , whichever is greater; if no Actual ssign the hazardous waste	( )		
9.	Assign the highest ground wate Table 3 or 4.	L. C.			
10.	Multiply the ground water toxicit quantity scores. Assign the Watable below: (from HRS Table 2	ste Characteristics score from the	. <del>-</del>		
	Product 0 >0 to <10 10 to <100 100 to <1,000 1,000 to <10,000 10,000 to <1E + 05 1E + 05 to <1E + 06 1E + 06 to <1E + 07 1E + 07 to <1E + 08 1E + 08 or greater	WC Score  0 1 2 3 6 10 18 32 56 100	Ť.		
		WC =			1

Multiply LR by T and by WC. Divide the product by 82,500 to obtain the ground water pathway score for each aquifer. Select the highest aquifer score. If the pathway score is greater than 100, assign 100.

GROUND WATER PATHWAY SCORE:

LR X T X WC 82,500

(Maximum of 100)

### SURFACE WATER PATHWAY

```
Sketch of the Surface Water Migration Route:
Label all surface water bodies. Include runoff route and drainage direction, probable point of entry, and
15-mile target distance limit. Mark sample locations, intakes, fisheries, and sensitive environments.
Indicate flow directions, tidal influence, and rate.
                                              La the same
                                   * The fire works, a do also made the form Real Results, is
                                                  The state of the s
```

#### SURFACE WATER PATHWAY

#### Surface Water Observed Release Substances Summary Table

On SI Table 7, list the hazardous substances detected in surface water samples for the watershed, which can be attributed to the site. Include only those substances in observed releases (direct observation) or with concentration levels significantly above background levels. Obtain toxicity, persistence, bloaccumulation potential, and ecotoxicity values from SCDM. Enter the highest toxicity/persistence, toxicity/persistence/bioaccumulation, and ecotoxicity/persistence/ecobioaccumulation values in the spaces provided.

- TP = Toxicity x Persistence
- TPB = TP x bioaccumulation
- ETPB = EP x bioaccumulation (EP = ecotoxicity x persistence)

#### **Drinking Water Actual Contamination Targets Summary Table**

For an observed release at or beyond a drinking water intake, on SI Table 8 enter each hazardous substance by sample ID and the detected concentration. For surface water sediment samples detecting a hazardous substance at or beyond an intake, evaluate the intake as Level II contamination. Obtain benchmark, cancer risk, and reference dose concentrations for each substance from SCDM. For MCL and MCLG benchmarks, determine the highest percentage of benchmark obtained for any substance. For cancer risk and reference dose, sum the percentages of the substances listed. If benchmark, cancer risk, or reference dose concentrations are not available for a particular substance, enter N/A for the percentage. If the highest benchmark percentage or the percentage sum calculated for cancer risk or reference dose equals or exceeds 100%, evaluate the population served by the intake as a Level I target. If the percentages are less than 100% or all are N/A, evaluate the population served by the intake as a Level II target.

Sample ID	Hazardous Substance	Conc.	Persistence	Bioaccum	Ecobioaccum	References		
								•
	•	hest Values		l		<u> </u>		
SI TABLE 8:	SURFACE WATER	DRINKING	WATER ACT	UAL CON	TAMINATION	TARGETS		
Intake ID:	Sample Type		Lev	el I	Level II	Population Serve	dReferen	1085
Sample ID	Hazardous Substance	Conc.	Benchmark Conc. (MCL or MCLG)	% of Benchmark	Cancer Risk Conc.	% of Cancer Risk Conc.	RID	% of RID
								:
			Highest		Sum of		Sum of	
			Percent	L	Percents		Percents	<u> </u>
Intake ID:	Sample Type		Lev	/el l	Level II	Population Serve	dRefere	nces
Sample ID	Hazardous Substance	Conc.	Benchmark Conc. (MCL or MCLG)	% of Benchmark	Cancer Risk Conc.	% of Cancer Risk Conc.	RiD	% of RID
Settible ID	1,122,0003 0003181108					111011 551151		76 01 1110
	, , , , , , , , , , , , , , , , , , , ,		ļ	<del> </del>		,		
· ·		,	Highest Percent		Sum of v Percents		Sum of Percents	

Toxicity/ Persis./

Ecotoxicity/ Persis/

SI TABLE 7: SURFACE WATER OBSERVED RELEASE SUBSTANCES

Bckgrd.

Toxicity/

### SURFACE WATER PATHWAY LIKELIHOOD OF RELEASE AND DRINKING WATER THREAT WORKSHEET

	RELIMOOD OF RELEASE— REPLAND/FLOOD MIGRATION		Score	Type	Refs
	OBSERVED RELEASE: If sampling data or direct	* observation	30016	Tiype	Lieiz.
1 ''	support a release to surface water in the watership	1 🔆	1	ľ	
1	of 550. Record observed release substances on		,		ļ
2.	POTENTIAL TO RELEASE: Distance to surface		<del> </del>		1
	If sampling data do not support a release to surface		ĺ	1	
ĺ	watershed, use the table below to assign a score		[		
1	below based on distance to surface water and flo		}		<b>J</b>
1	Distance to surface water of 00 to st	F00	}		
]	Distance to surface water <2500 feet	500			}
1	Distance to surface water >2500 feet, and:			{	
Ì	Site in annual or 10-yr floodplain	500			
	Site in 100-yr floodplain	400	1,25	}	
	Site in 500-yr floodplain	300	1		
	Site outside 500-yr floodplain	100		ł	
	Ontionally evaluate surface water actachist to sale		,	<b>!</b>	
	Optionally, evaluate surface water potential to rele	ase		ĺ	
	according to HRS Section 4.1.2.1.2				<del></del>
		LR ≈		[	_
		Ln =	<u></u>	j	-
1.00	ELIHOOD OF RELEASE			Data	
	OUND WATER TO SURFACE WATER MIG	RATION	Score	Type	Refs
	OBSERVED RELEASE: If sampling data or direct		- 00010	1,750	
	support a release to surface water in the watershe			1	
	of 550. Record observed release substances on the				
	•			1 1	
NO	E: Evaluate ground water to surface water migrati	ion only for a		1 {	
	surface water body that meets all of the following of		!	1 1	
			1 K 1 1		
	A portion of the surface water is within 1 mile of sit	e sources having	1	1	
	a containment factor greater than 0.			1 1	
	No aquifer discontinuity is established between th	e source and the	,	1 1	
	above portion of the surface water body.		} {		
	The top of the uppermost aquifer is at or above the		1		
	surface water.			1	
	ation of top of uppermost aquifer	<del></del> [		1 1	
C10 A	allors of collotte of surface water cody				
2.	POTENTIAL TO RELEASE: Use the ground water	r potential to	<del></del>		
	release. Optionally, evaluate surface water potenti				
	according to HRS Section 3.1.2.				
				1	
		LDl			

\* I'm Asserted return a man hart and the first

10

 $\Theta_f$ 

C-23

A) . . .

TABLE 4-1
SURFACE MATER OVERLAND/FLOOD MIGRATION COMPONENT SCORESHEET

factor Categories and Factors	Maximum Value	Value Assigned
RINKING WATER TEREAT		
Likelihood of Release		•
l. Observed Release	550	
. Potential to Release by		
Overland Flow		•
2a. Containment	10	frem p. C-23AV
2b. Runoff	25	trem 0 (-23 E
2c. Distance to Surface Water	25	from p. C-23AY from p. C-23E from p. C-23F
2d. Potential to Release by Overland Flow		tron p. C-23 /-
(lines 2a x [2b + 2c])	500	
Potential to Release by Flood		<del></del>
3a. Containment (Flood)	10	frem P. C-23 F1/2
3b. Flood Frequency	50	
3c. Potential to Release	•	TI-Mp. 2-23 G
by Flood (lines 3a x 3b)	500	
Potential to Release		
(lines 2d + 3c, subject to		
a maximum of 500)	500	
Likelihood of Release		<del></del>
(higher of lines 1 and 4)	550	/
		<del></del>
Waste Characteristics		
		<i></i>
Toxicity/Persistence	a /	
Hazardous Wasse Quantity	3	
Waste Characceristics	100	
Tirgers	<b>/</b> .	•
Targets	•	
Nearest Intake	50	
Population		
•	> Ъ	
10a. Level I Concentrations	ь	<del></del>
10a. Level I Concentrations 10b. Level IJ Concentrations	<b>\</b> .	
10a. Level I Concentrations 10b. Level II Concentrations 10c. Potential Contamination	<b>\</b> .	
10a. Level I Concentrations 10b. Level IJ Concentrations	<b>\</b> .	

#### TABLE 4-2 CONTAINMENT FACTOR VALUES FOR SURFACE WATER MIGRATION PATHWAY

Evidence of hazardous substance migration from source area (i.e., source area includes source and any associated containment structures).  No evidence of hazardous substance migration from source area snd:  (a) Neither of the following present: (1) maintained engineered cover, or (2) functioning and maintained run-on control system and runoff management system.  (b) Any one of the two items in (a) present.  (c) Any two of the following present: (1) maintained engineered cover, or (2) functioning and maintained run-on control system and runoff management system, or (3) liner with functioning leachate collection and removal system immediately above liner.  (d) All items in (c) present.  (e) All items in (c) present, plus no bulk or non- containerized liquids nor materials containing free liquids deposited in source area.  No evidence of hazardous substance migration from source srea, double liner with functioning leachate collection and removal system above and between liners, and:  (f) Only one of the following deficiencies present in containment: (1) bulk or noncontainerized liquids or materials containing free liquids deposited in source area, or (2) no or nonfunctioning or normaintained run-on control system and runoff management system, or (3) no or nonmaintained engineered cover.  (g) None of the deficiencies in (f) present.	All Sour	ces (except surface impoundments, land treatment, containers, and tanks)	Assigned Value
(a) Neither of the following present: (1) maintained engineered cover, or (2) functioning and maintained run-on control system and runoff management system.  (b) Any one of the two items in (a) present.  (c) Any two of the following present: (1) maintained engineered cover, or (2) functioning and maintained run-on control system and runoff management system, or (3) liner with functioning leachate collection and removal system immediately above liner.  (d) All items in (c) present.  (e) All items in (c) present, plus no bulk or non-containerized liquids nor materials containing free liquids deposited in source area.  No evidence of hazardous substance migration from source area, double liner with functioning leachate collection and removal system above and between liners, and:  (f) Only one of the following deficiencies present in containment: (1) bulk or noncontainerized liquids or materials containing free liquids deposited in source area, or (2) no or nonfunctioning or normaintained run-on control system and runoff management system, or (3) no or nonmaintained engineered cover.	(i.e., s	ource area includes source and any associated	10
engineered cover, or (2) functioning and maintained run-on control system and runoff management system.  (b) Any one of the two items in (a) present.  (c) Any two of the following present: (1) maintained engineered cover, or (2) functioning and maintained run-on control system and runoff management system, or (3) liner with functioning leachate collection and removal system immediately above liner.  (d) All items in (c) present.  (e) All items in (c) present, plus no bulk or non-containerized liquids nor materials containing free liquids deposited in source area.  No evidence of hazardous substance migration from source area, double liner with functioning leachate collection and removal system above and between liners, and:  (f) Only one of the following deficiencies present in containment: (1) bulk or noncontainerized liquids or materials containing free liquids deposited in source area, or (2) no or nonfunctioning or normaintained run-on control system and runoff management system, or (3) no or nonmaintained engineered cover.			7
(c) Any two of the following present: (1) maintained engineered cover, or (2) functioning and maintained rum-on control system and rumoff management system, or (3) liner with functioning leachate collection and removal system immediately above liner.  (d) All items in (c) present.  (e) All items in (c) present, plus no bulk or non-containerized liquids nor materials containing free liquids deposited in source area.  No evidence of hazardous substance migration from source area, double liner with functioning leachate collection and removal system above and between liners, and:  (f) Only one of the following deficiencies present in containment: (1) bulk or noncontainerized liquids or materials containing free liquids deposited in source area, or. (2) no or nonfunctioning or normaintained rum-on control system and rumoff management system, or (3) no or nonmaintained engineered cover.	(a)	engineered cover, or (2) functioning and maintained	10
engineered cover, or (2) functioning and maintained run-on control system and runoff management system, or (3) liner with functioning leachate collection and removal system immediately above liner.  (d) All items in (c) present.  (e) All items in (c) present, plus no bulk or non-containerized liquids nor materials containing free liquids deposited in source area.  No evidence of hazardous substance migration from source area, double liner with functioning leachate collection and removal system above and between liners, and:  (f) Only one of the following deficiencies present in containment: (1) bulk or noncontainerized liquids or materials containing free liquids deposited in source area, or (2) no or nonfunctioning or normaintained run-on control system and runoff management system, or (3) no or nonmaintained engineered cover.	(b)	Any one of the two items in (a) present.	9
(e) All items in (c) present, plus no bulk or non- containerized liquids nor materials containing free liquids deposited in source area.  No evidence of hazardous substance migration from source area, double liner with functioning leachate collection and removal system above and between liners, and:  (f) Only one of the following deficiencies present in containment: (1) bulk or noncontainerized liquids or materials containing free liquids deposited in source area, or. (2) no or nonfunctioning or normaintained run-on control system and runoff management system, or (3) no or nonmaintained engineered cover.	(c)	engineered cover, or (2) functioning and maintained run-on control system and runoff management system, or (3) liner with functioning leachate collection and	7
containerized liquids nor materials containing free liquids deposited in source area.  No evidence of hazardous substance migration from source area, double liner with functioning leachate collection and removal system above and between liners, and:  (f) Only one of the following deficiencies present in containment: (1) bulk or noncontainerized liquids or materials containing free liquids deposited in source area, or. (2) no or nonfunctioning or nonmaintained run-on control system and runoff management system, or (3) no or nonmaintained engineered cover.	(d)	All items in (c) present.	5
double liner with functioning leachate collection and removal system above and between liners, and:  (f) Only one of the following deficiencies present in containment: (1) bulk or noncontainerized liquids or materials containing free liquids deposited in source area, or. (2) no or nonfunctioning or normaintained run-on control system and runoff management system, or (3) no or nonmaintained engineered cover.	(e)	containerized liquids nor materials containing free	3
containment: (1) bulk or noncontainerized liquids or materials containing free liquids deposited in source area, or (2) no or nonfunctioning or nonmaintained run-on control system and runoff management system, or (3) no or nonmaintained engineered cover.	double li	ner with functioning leachate collection and removal	
	(£)	containment: (1) bulk or noncontainerized liquids or materials containing free liquids deposited in source area, or (2) no or nonfunctioning or nonmaintained run-on control system and runoff management system, or (3) no or nonmaintained	3
	(g)		. 0

### TABLE 4-3 DRAINAGE AREA VALUES

Drainage Area (acres)	Assigned Value
Less than 50	1 .
50 to 250	2
Greater than 250 to 1,000	3
Greater than 1.000	4

across a source based on observing topographic map of the area.

### TABLE 4-4 SOIL GROUP DESIGNATIONS

Surface Soil Description	Soil Group Designation
Coarse-textured soils with high infiltration rates (for example, sands, loamy sands)	<b>A</b>
Medium-textured soils with moderate infiltration rates (for example, sandy loams, loams)	<b>B</b>
Moderately fine-textured soils with low infiltration rates (for example, silty loams, silts, sandy clay loams)	c
Fine-textured soils with very low infiltration rates (for example, clays, sandy clays, silty clay loams, clay loams, silty clays); or impermeable surfaces (for example, pavement)	get into from Soil Survey

TABLE 4-5
RAINFALL/RUNOFF VALUES

2-Year, 24-Hour Rainfall		_ Soil Group Designation					
(inches)	Α .	В	·c	D			
Less than 1.0	0	o	2	3			
1.0 co less than 1.5	0	1	2	3			
1.5 to less than 2.0	.0	2	3	4			
2.0 to less than 2.5	1	2	3	. 4			
.5 to less than 3.0	2	3	4	4			
.O to less than 3.5	. 2	3	4	5			
.S or greacer	3	4	<b>5</b>	6			

Rainfall frequency attas

TABLE 4-6
RUNOFF FACTOR VALUES

Drainage		•	Reinf	ıll/Ru	noff Va	lue	
Area Value	0	1	2	3	4	5	6
1.	0	0	0	1	1	1	1
2	0	0	1	1	2	3	4
- 3	   0 	0	1	3	7	<b>[1</b> ]	15
4	   0 	1	2	7	17	25	25

TABLE 4-7
DISTANCE TO SURFACE WATER FACTOR VALUES

Distance	Assigned Value
Less than 100 feet	- 25
100 feet to 500 feet .	. 20
Greater than 500 feet to 1,000 feet	16
Freater than 1,000 feet to 2,500 feet	9
reater than 2,500 feet to L5 miles	6
reacer than 1.5 miles to 2 miles	3

## TABLE 4-8 CONTAINMENT (FLOOD) FACTOR VALUES

Containment Criteria	Assigned Value
Documentation that containment at the source is designed, constructed, operated, and maintained to prevent a washout of hazardous substances by the flood being evaluated	
Other	10

### TABLE 4-9 FLOOD FREQUENCY FACTOR VALUES

Floodplain Category	Assigned Value
Source floods annually	50
Source in 10-year floodplain	50
Source in 100-year floodplain	25
Source in 500-year floodplain	<b>7</b>
None of above	0

# SURFACE WATER PATHWAY LIKELIHOOD OF RELEASE AND DRINKING WATER THREAT WORKSHEET (CONTINUED)

		Data	
DRINKING WATER THREAT TARGETS	Score	Type	Reis
Record the water body type, flow, and number of people served by each drinking water intake within the target distance limit in the watershed. If there is no drinking water intake within the target distance limit, assign 0 to factors 3, 4, and 5.			
Are any intakes part of a blended system? Yes No If yes, attach a page to show apportionment calculations.  3. ACTUAL CONTAMINATION TARGETS: If analytical evidence indicates a drinking water intake has been exposed to a hazardous			
substance from the site, list the intake name and evaluate the factor score for the drinking water population (SI Table 8).  Level I: people x 10 = Total =			-
4. POTENTIAL CONTAMINATION TARGETS: Determine the number of people served by drinking water intakes for the watershed that have not been exposed to a hazardous substance from the site. Assign the population values from SI Table 9. Sum the values and multiply by 0.1.			
5. NEAREST INTAKE: Assign a score of 50 for any Level I Actual Contamination Drinking Water Targets for the watershed. Assign a score of 45 if there are Level II targets for the watershed, but no Level I targets. If no Actual Contamination Drinking Water Targets exist, assign a score for the Intake nearest the PPE from SI Table 9. If no drinking water intakes exist, assign 0.			
<ul> <li>6. RESOURCES: Assign a score of 5 if one or more surface water resource applies; assign 0 if none applies.</li> <li>Irrigation (5 acre minimum) of commercial food crops or commercial forage crops</li> <li>Watering of commercial livestock</li> <li>Ingredient in commercial food preparation</li> <li>Major or designated water recreation area, excluding drinking water use</li> </ul>	: ;		
SUM OF TARGETS T=			

# SI TABLE 9 (From HRS Table 4-14): DILUTION-WEIGHTED POPULATION VALUES FOR POTENTIAL CONTAMINATION FOR SURFACE WATER MIGRATION PATHWAY

						Numbe	er of p	people				
Type of Surface Water	Pop.	Nearest Intake	0	1 10 10	11 to 30	31 to 100	101 10 300	10	1,001 10 3,000	10	10,001 to 30,000	Pop. Value
Body	<u> </u>	20	0	4	17	53	164	522	1,633	5,214	16,325	
Minimal Stream (<10 cfs)  Small to moderate stream			0	0.4	2	5	16	52	163	521	1,633	
(10 to 100 cfs)		2						5	16	52	163	
Moderate to large atream (> 100 to 1,000 cfs)	Çz.	0	0	0.04	0.2	0.5	2	3				
Large Stream to river (>1,000 to 10,000 cfs)		0	0	0.004	0.02	0.05	0.2	0.5	2	5	16	
Large River (> 10,000 to 100,000 cfs)		0	0	0	0.002	0.005	0.02	0.05	0.2	0.5	16	
Very Large River (>100,000 cfs)		0	0	0	0	0.001	0.002	0.005	0.02	0.05	0.2	
Shallow ocean zone or Great Lake		0	0	0	0.002	0.005	0.02	0.05	0.2	0.5	2	
(depth < 20 feet)  Moderate ocean zone or	-	0	0	0	0	0.001	0.002	0.005	0.02	0.05	0.2	
Great Lake (Depth 20 to 200 feet) Deep ocean zone or Great	-	0	0	0	0	0	0.001	0.003	0.008	0.03	0.08	
Lake (depth > 200 feet)  3-mile mixing zone in quie		10	0	2	9	26	82	261	817	2,60	7 8,163	
flowing river (≥ 10 cfs)		10	<del>- -</del> -			<u></u>	.1		- لــــــــــــــــــــــــــــــــــــ		Sum :	

<b>V</b>	
References	

TABLE 4-14 (Concluded)

			Number of	People	
Type of Surface Water Body <sup>b</sup>	30,001 to 100,000	100,001 to 300,000	300,001 to 1,000,000	1,000,001 to 3,000,000	3,000,001 to 10,000,000
Hinimal stream (< 10 cfs)	52,137	163,246	521,360	1,632,455	5,213,590
Small to moderate stream (10 to 100 cfs)	5,214	16,325	52,136	163,245	521,359
Moderate to large stream (> 100 to 1,000 cfs)	521	1,633	5,214	16,325	52,136
Large stream to river (> 1,000 to 10,000 cfs)	52	163	521	1,632	5,214
Large river (> 10,000 to 100,000 cfs)	5	16	52	163	521
Very large river (> 100,000 cfs)	0.5	2	5	16	52
Shallow ocean zone or Great Lake (depth < 20 feet)	5	16	52	163	521
Moderate ocean zone or Great Lake (depth 20 to 200 feet)	0.5	2	5	16	52
Deep zone or Great Lake (depth > 200 feet)	0.3	1	3	8	26
3-mile mixing zone in quiet flowing river (≥ 10 cfs)	26,068	81,623	260,680	816,227	2,606,79

<sup>&</sup>lt;sup>a</sup>Round the number of people to nearest integer. Do not round the assigned dilutionweighted population value to nearest integer.

Treat each lake as a separate type of water body and assign it a dilution-weighted population value using the surface water body type with the same dilution weight from Table 4-13 as the lake. If drinking water is withdrawn from coastal tidal water or the ocean, assign a dilution-weighted population value to it using the surface water body type with the same dilution weight from Table 4-13 as the coastal tidal water or the ocean zone.

#### SURFACE WATER PATHWAY

#### Human Food Chain Actual Contamination Targets Summary Table

On SI Table 10, list the hazardous substances detected in sediment, aqueous, sessile benthic organism tissue, or fish tissue samples (taken from fish caught within the boundaries of the observed release) by sample ID and concentration. Evaluate fisheries within the boundaries of observed releases detected by sediment or aqueous samples as Level II, if at least one observed release substance has a bioaccumulation potential factor value of 500 or greater (see SI Table 7). Obtain benchmark, cancer risk, and reference dose concentrations from SCDM. For FDAAL benchmarks, determine the highest percentage of benchmark obtained for any substance. For cancer risk and reference dose, sum the percentages for the substances listed. If benchmark, cancer risk, or reference dose concentrations are not available for a particular substance, enter N/A for the percentage. If the highest benchmark percentage sum calculated for cancer risk or reference dose equals or exceeds 100%, evaluate this portion of the fishery as subject to Level I concentrations. If the percentages are less than 100% or all are N/A, evaluate the fishery as a Level II target.

#### Sensitive Environment Actual Contamination Targets Summary Table

On SI Table 11, list each hazardous substance detected in aqueous or sediment samples at or beyond wetlands or a surface water sensitive environment by sample ID. Record the concentration. If contaminated sediments or tissues are detected at or beyond a sensitive environment, evaluate the sensitive environment as Level II. Obtain benchmark concentrations from SCDM. For AWQC/AALAC benchmarks, determine the highest percentage of benchmark of the substances detected in aqueous samples. If benchmark concentrations are not available for a particular substance, enter N/A for the percentage. If the highest benchmark percentage equals or exceeds 100%, evaluate that part of the sensitive environment subject to Level I concentrations. If the percentage is less than 100%, or all are N/A, evaluate the sensitive environment as Level II.

ishery ID:	Sar	nple Type		Level	1	Level II	References	
Sample ID	Hazardous Substance	Conc. (mg/kg)	Benchmark Concentration (FDAAL)	% of Benchmark	Cancer Risk Concentration.	% of Cancer Risk Concentration	RID	% of RID
								<del></del>
		· · · · · · · · · · · · · · · · · · ·	l Highest Percent		Sum of Percents		Sum of Percents	
TABLE 1	1: SENSITIVE ENVI	RONMENT	ACTUAL CO	NTAMINAT	ION TARGETS	S FOR WATE	RSHED	
nvironment il	D: Sa	прів Туре		Leve	11	Level II	Environment Valu	e
Sample ID	Hazardous Substance	Conc (µg∕L)	Benchmark Concentration (AWQC or AALAC)	% of Benchmark	References			
						· ·		
						•		
			,Highest Percent			·		
invironment I	D: Sa	mple Туре <u> </u>		Leve	11	Level II	Environment Valu	· e
Sample ID	Hazardous Substance	Conc (μg/L)	Benchmark Concentration (AWQC or AALAC)	% of Benchmark	References			
						- -		
						-		
			Wighest			-		
		•	Highest Percent		,			

# SURFACE WATER PATHWAY (continued) HUMAN FOOD CHAIN THREAT WORKSHEET

HUMAN FOOD CHAIN THREAT T	ARGETS	Score	Data Type	Refs
Record the water body type and fle target distance limit. If there is no distance limit, assign a score of 0 a	ow for each fishery within the fishery within the target	30016	Type	Nets
Fishery Name Water Body				
Species Production Production	lbs/yr			
Fishery Name Water Body	Ω			
Charles Braduation	lha 6 ca			
Species Production_ Species Production_	lbs/yr			
Fishery Name Water Body	ĮĮ.			
Species Production_ Species Production_	lbs/yr			
If analytical evidence indicates that a hazardous substance with a bioacor equal to 500 (SI Table 10), assign Level I fishery. Assign 45 if there is I fishery.  8. POTENTIAL CONTAMINATION FISH If there is a release of a substance was greater than or equal to 500 to a way within the target distance limit, but the fisheries, assign a score of 20.  If there is no observed release to the for potential contamination fisheries the lowest flow at all fisheries within	ccumulation factor greater than a score of 50 if there is a a Level II fishery, but no Level SHERIES:  with a bioaccumulation factor attershed containing fisheries here are no Level I or Level II  e watershed, assign a value of from the table below using			-
Lowest Flow	FCI Value		1	
<10 ds	20			ľ
10 to 100 cfs	2	1		
>100 cfs, coastal tidal waters, oceans, or Great Lakes	<b>o</b>	ز ً	Ì	
3-mile mixing zone in quiet	10			ļ
	FCI Value =			
	SUM OF TARGETS T =	.,		

# SURFACE WATER PATHWAY (continued) ENVIRONMENTAL THREAT WORKSHEET

When measuring length of wetlands that are located on both sides of a surface water body, sum both frontage lengths. For a sensitive environment that is more than one type, assign a value for each type.

			REAT TARGE				Score	Туре	Refs
se If t	cord the wat nsitive environ here is no se sign a score								
Environ	ment Name		Water Body Type		Flov	v	1	1	
						cts	1		
						cts	11	1	
						cls	1		
	<del></del>					cls	Ì		
	<del></del>					cfs		j	
L							<b>.</b>		
san env site	npling data or rironment ha , record this i	r direct o s been e informati	ON SENSITIVE Entrope indicates to a haze to a	ate any : ardous : 1, and a	sensitive substand ssign a f	e from the			
Environn	nent Name	Environ Value (S	ment Type and SI Tables 13 & 14)	Multiplie Level I, Level II	1 for	Product			
				×					
			. (	x					
			·	x					
		) 		×			1		į
L		<u> </u>				Sum =	[	] [	j
10. PO	TENTIAL CO	NTAMIN	NATION SENSIT	IVE ENV	/IRONM				
Flow	Dilution Weig (SI Table 12)		Environment Type Value (SI Tables	e and 13 & 14)	Pot. Cont.	Product			- }
cfs	) . ·	×	the Company of the Company	· (	0.1 =	$x^{-1} = f^{-1}$	,		1
· cfs	5	x		, x	0.1 =	1 12	: <i>[</i> .		
cfs		×	–	x	0.1 =	·			}
cfs		x		×	0.1 =			}	}
				<del></del>					ļ
cts	<u> </u>	X		x	0.1 =	L		l	}
		<del></del>				Sum =	<del> </del>	<b> </b>	
						τ_	$\sim 7$ .	1	

### SI TABLE 12 (HRS Table 4-13): SURFACE WATER DILUTION WEIGHTS

Type of Surface Water Body		Assigned Dilution Weight
Descriptor	Flow Characteristics	<del> </del>
Descriptor	< 10 cfs	<u> </u>
Minimal stream Small to moderate stream	10 to 100 cfs	0.1
	> 100 to 1,000 cfs	0.01
Moderate to large stream	> 1,000 to 10,000 cfs	0.001
Large stream to river		0.0001
Large river	> 10,000 to 100,000 cfs	0.00001
Very large river	> 100,000 cfs	
Coastal tidal waters	Flow not applicable; depth not applicable	0.001
Coastal tidal waters	Flow not applicable; depth less than 20 feet	0.001-0.0
Shallow ocean zone or Great Lake	Flow not applicable; depth 20 to 200 feet	0.0001
Moderate depth ocean zone or Great Lake	Flow not applicable; depth greater than 200 feet	0.00000
Deep ocean zone or Great Lake		0.5
3-mile mixing zone in quiet flowing river	10 cfs or greater	

#### SI TABLE 13 (HRS TABLE 4-23): SURFACE WATER AND AIR SENSITIVE ENVIRONMENTS VALUES

	ASSIGNED
SENSITIVE ENVIRONMENT	VALUE
Critical habitat for Federal designated endangered or threatened species	100
Marine Sanctuary	1
National Park	
Designated Federal Wilderness Area	
Ecologically important areas identified under the Coastal Zone Wilderness Act	[
Sensitive Areas identified under the National Estuary Program or Near Coastal	İ
Water Program of the Clean Water Act	1
Critical Areas identified under the Clean Lakes Program of the Clean Water Act	
(subareas in lakes or entire small lakes)	j
National Monument (air pathway only)	100
National Seashore Recreation Area	
National Lakeshore Recreation Area	<del>/</del>
Habitat known to be used by Federal designated or proposed endangered or threatened species	75
National Preserve	
National or State Wildlife Refuge	
Unit of Coastal Barrier Resources System	1 /
Coastal Barrier (undeveloped)	
Federal land designated for the protection of natural ecosystems	
Administratively Proposed Federal Wilderness Area	
Spawning areas critical for the maintenance of fish/shellfish species within a	
river system, bay, or estuary	-
Migratory pathways and feeding areas critical for the maintenance of	
anadromous fish species within river reaches or areas in lakes or coastal	
tidal waters in which the fish spend extended periods of time	
Terrestnal areas utilized by large or dense aggregations of vertebrate animals	
(semi-aquatic foragers) for breeding	
National river reach designated as recreational	
Habitat known to be used by State designated endangered or threatened species	50
Habitat known to be used by a species under review as to its Federal endangered	
or threatened status	
Coastal Barrier (partially developed)	
Federally designated Scenic or Wild River	
State land designated for wildlife or game management	25
State designated Scenic or Wild River	1
State designated Natural Area	
Particular areas, relatively small in size, important to maintenance of unique biotic communities	
State designated areas for the protection of maintenance of aquatic life under the Clean Water	5
Act	
Wetlands See Si Table 14 (Surface Water Pathway) or SI Table 23 (Air Pathway)	•

## SI TABLE 14 (HRS TABLE 4-24): SURFACE WATER WETLANDS FRONTAGE VALUES

Total Length of Wetlands	Assigned Valu	e
Less than 0.1 mile	. 0	
0.1 to 1 mile	25	
Greater than 1 to 2 miles	50	
Greater than 2 to 3 miles	75	
Greater than 3 to 4 miles	100	
Greater than 4 to 8 miles	150	
Greater than 8 to 12 miles	250	
Greater than 12 to 16 miles	350	
Greater than 16 to 20 miles	450	
Greater than 20 miles	500	

# SURFACE WATER PATHWAY (concluded) WASTE CHARACTERISTICS, THREAT, AND PATHWAY SCORE SUMMARY

WASTE CHARACT	ERISTICS					S∞re
<ol> <li>If an Actual Contamination Target (drinking water, human food chain, or environmental threat) exists for the watershed, assign</li> </ol>						
the calculated hazardous waste quantity score, or a score of 100,						
whichever is greater.						<u>'                                     </u>
	15. Assign the highest value from SI Table 7 (observed release) or SI					
Table 3 (no obser						
characterization fa hazardous waste						1
characteristics sco			0111 <b>m</b> 10 11	io ma	310	
						WC Score (from Table)
	Substance Val	ne	HWQ		Product	(Maximum-of-100)-
Drinking Water Threat Toxicity/Persistence		x	. :	_	1, 1	Max : 180
Food Chain Threat			1		<u> </u>	may = 1000
Toxicity/Persistence	)		, ,			
Bioaccumulation Environmental Threat	<del></del>	x	<del> </del>			R16- 5 (100
Ecotoxicity/Persistence/						### £ 1856
Ecobioaccumulation	`) '	x		-		
						_
Product		ļ	WC S∞	10		
0 >0 to <10			0	1		
10 to <100		1	2	1		1
100 to <1,00	0	Ì	3	- 1		
1,000 to < 10	,000		6	1		
10,000 to <18		j	10	- 1		
1E+05 to <1			18	-		
1E + 06 to <1		i	32 56			
1E + 07 to <1 1E + 08 to <1		1.	100	- 1		ļ
1E + 09 to <1		<b>.</b>	180	- !		1
1E + 10 to <1		}	320	- 1	• • .	į
1E+11 to <1		Ì	560	- }		1
1E + 12 or gr	eater	<u></u>	1000		• :	1
						1

SURFACE WATER PATHWAY THREAT SCORES

Threat	Likelihood of Release (LR) Score	Targets (T) Score	Pathway Waste Characteristics (WC) Score (determined above)	Threat Score  LR x T x WC  82,500
Drinking Water	29,		(Y	(maximum of 100)
Human Food Chain	273	)	1	(maximum of 100)
Environmental	17/2	0.45	$F \sim$	(maximum of 60)

SURFACE WATER PATHWAY SCORE (Drinking Water Threat + Human Food Chain Threat + Environmental Threat)

(maximum of	100)
~)	

#### SOIL EXPOSURE PATHWAY

If there is no observed contamination (e.g., ground water plume with no known surface source), do not evaluate the soil exposure pathway. Discuss evidence for no soil exposure pathway.

Soil Exposure Resident Population Targets Summary

For each property (duplicate page 35 as necessary):

If there is an area of observed contamination on the property and within 200 feet of a residence, school, or day care center, enter on Table 15 each hazardous substance by sample ID. Record the detected concentration. Obtain cancer risk, and reference dose concentrations from SCDM. Sum the cancer risk and reference dose percentages for the substances listed. If cancer risk or reference dose concentrations are not available for a particular substance, enter NVA for the percentage. If the percentage sum calculated for cancer risk or reference dose equals or exceeds 100%, evaluate the residents and students as Level I. If both percentages are less than 100% or all are NVA, evaluate the targets as Level II.

#### SI TABLE 15: SOIL EXPOSURE RESIDENT POPULATION TARGETS

Residence ID:		<del></del>	Levell	Level	11	Population		
Sample ID	Hazardous Substance	Conc. (mg/kg)	Cancer Risk Concentration	% of Cancer Risk Conc.	RID	% of RID	Toxicity Value	References
			Highest Percent		Sum of Percents		Sum of Percents	
Residence ID: _			Level I	Level	11	Population		
Sample ID	Hazardous Substance	Conc. (mg/kg)	Cancer Risk Concentration	% of Cancer Risk Conc.	RID	% of RfD	Toxicity Value	References
			Highest Percent		Sum of Percents		Sum of Percents	
Residence ID:_			Levell	Leve	1 11	Population		
Sample ID	Hazardous Substance	Conc. (mg/kg)	Cancer Risk Concentration	% of Cancer Risk Conc.	RID	% of RID	Toxicity Value	References
			Highest Percent		Sum of Percents		Sum of Percents	

## SOIL EXPOSURE PATHWAY WORKSHEET RESIDENT POPULATION THREAT

1.112	FLINOOD OF EVROCUEE		Score	Data	Date
	ELIHOOD OF EXPOSURE	· d · · · · · · · · · · · · · · · · · ·	30018	Туре	Refs
	OBSERVED CONTAMINATION: If exobserved contamination (depth of 2 fe				-
	550; otherwise, assign a 0. Note that			ļ	ļ
	score of 0 results in a soil exposure pa		·	1	
<u> </u>	social of a reading ii. a soil expedition pa	annay soore or o.		<del> </del>	
		LE =	+ 1	l	
		, <b>LC</b> =		7	
TAF	IGETS				
2.	RESIDENT POPULATION: Determin	ne the number of people			
11	vine or attending school or day				
Ca	re on a property with an area of obse	rved contamination and whose		<b>!</b> }	
re	sidence, school, or day care center, thin 200 feer of the area of observed	respectively, is on or	0	] }	
	Level I: people x 10 =	Concentration.		]	
l .	Level II: people x 1 =	Sum =		1 1	
١.				) }	
3.	RESIDENT INDIVIDUAL: Assign a soc	ore of 50 if any Level I		1	
	resident population exists. Assign a se			] ]	•
	targets but no Level I targets. If no re-		д	1 1	_
	no Level I or Level II targets), assign 0			1	
	WORKERS: Assign a score from the				
	number of workers at the site and near			1	
	observed contamination associated w			1	
1	Number of Workers	Score		1	
}	0	(6)			
	1 to 100	5	$\langle O \rangle$		
	101 to 1,000	10	·/	}	
1	>1,000	15			
	>1,000			}	
c .	TERRECTRIAL CENCITIVE CNIVIDON	MCNTC: Assiss symbol for			
	TERRESTRIAL SENSITIVE ENVIRON			1	
	each terrestrial sensitive environment (	Si rable 16) in an area of			
'	observed contamination.		1		
	The state of the s	<del></del>			
	Terrestrial Sensitive Environment Type	Value			
ı				İ	- 1
l I					
' :		— [ ——— [ [		İ	
	<u> </u>			ĺ	
	<del></del>			ĺ	
		Sum =		[	1
6.	RESOURCES: Assign a score of 5 if a			<del></del>	
	following resources is present on an a		j	J	j
	contamination at the site; assign 0 if no		ł	j	1
1		nie applies.	)	j	J
	Commercial agriculture Commercial silviculture		ļ	}	j
	<ul> <li>Commercial livestock production or</li> </ul>	commercial livertock	,	j	j
		CONTRICTOR IIVESIUCK		ļ	
L	grazing				
		Total of Targets T-	$C_{\lambda}$		

# SI TABLE 16 (HRS TABLE 5-5): SOIL EXPOSURE PATHWAY TERRESTRIAL SENSITIVE ENVIRONMENT VALUES

La production a sound

TERRESTRIAL SENSITIVE ENVIRONMENT	ASSIGNED VALUE
Terrestrial critical habitat for Federal designated endangered or threatened species	100
National Park Designated Federal Wilderness Area National Monument	
Terrestrial habitat known to be used by Federal designated or proposed threatened or endangered species National Preserve (terrestrial) National or State terrestrial Wildlife Refuge Federal land designated for protection of natural ecosystems Administratively proposed Federal Wildemess Area Terrestrial areas utilized by large or dense aggregations of animals (vertebrate species) for breeding	75
Terrestrial habitat used by State designated endangered or threatened species Terrestrial habitat used by species under review for Federal designated endangered or threatened status	50
State lands designated for wildlife or game management State designated Natural Areas Particular areas, relatively small in size, important to maintenance of unique biotic communities	25

# SOIL EXPOSURE PATHWAY WORKSHEET NEARBY POPULATION THREAT

LIF	KELIHOOD OF EXPOSURE		S∞re	Data Type	Ref.
7.	Attractiveness/Accessibility (from SI Table 17 or HRS Table 5-6)  Value				
	Area of Contamination (from SI Table 18 or HRS Table 5-7) Value				
	Likelihood of Exposure (from SI Table 19 or HRS Table	e 5-8)			
not	i: if there is no area of observed contaminations, LE = 0.	LE =	シ		
TA	RGETS		S∞re	Data Type	Ref.
TA 8.	Assign a score of 0 if Level I or Level II resident individual had evaluated or if no individuals live within 1/4 mile travel distant an area of observed contamination. Assign a score of 1 if ne population is within 1/4 mile travel distance and no Level I or II resident population has been evaluated.	ce of arby	Score	Data Type	Ref.
	Assign a score of 0 if Level I or Level II resident individual had evaluated or if no individuals live within 1/4 mile travel distant an area of observed contamination. Assign a score of 1 if ne population is within 1/4 mile travel distance and no Level I or	ce of earby Level not rties	Score		Ref.

#### SI TABLE 17 (HRS TABLE 5-6): ATTRACTIVENESS/ACCESSIBILITY VALUES

Area of Observed Contamination	Assigned Value
Designated recreational area	100
Regularly used for public recreation (for example, vacant lots in urban area)	75
Accessible and unique recreational area (for example, vacant lots in urban area)	75
Moderately accessible (may have some access improvements-for example, gravel road) with some public recreation use	50
Slightly accessible (for example, extremely rural area with no road improvement) with some public recreation use	25
Accessible with no public recreation use	/10
Surrounded by maintained lence or combination of maintained fence and natural barriers	5
Physically inaccessible to public, with no evidence of public recreation use	0

# SI TABLE 18 (HRS TABLE 5-7): AREA OF CONTAMINATION FACTOR VALUES

Total area of the areas of observed contamination (square feet)	Assigned Value
≤ to 5,000	5
> 5,000 to 125,000	20
> 125,000 to 250,000	40
> 250,000 to 375,000	60
> 375,000 to 500,000	80
> 500,000	100

# SI TABLE 19 (HRS TABLE 5-8): NEARBY POPULATION LIKELIHOOD OF EXPOSURE FACTOR VALUES

AREA OF CONTAMINATION FACTOR VALUE	ATTRACTIVENESS/ACCESSIBILITY FACTOR VALUE									
	100	7 5	5 0	2 5	10	5	0			
100	500	500	375	250	125	50	0			
80	500	375	250	125	50	25	0			
60	375	250	125	50	25	5	0			
4 0	250	125	50	25	5	5	0			
20	125	50	25	5	5	5	0			
5	50	25	5	5	5	5	0			

SI TABLE 20 (HRS TABLE 5-10): DISTANCE-WEIGHTED POPULATION VALUES FOR NEARBY POPULATION THREAT

Travel Distance Category (miles)		Number of people within the travel distance category											1	
	0	1 10 10	11 to 30	31 to 100	101 to 300	301 to 1,000	1,001 to 3,000	3,001 to 10,001	10,001 to 30,000	30,001 to 100,000	100,001 to 300,000	300,001 to 1,000,000	Pop. Value	
Greater than 0 to $\frac{1}{4}$	58	0	0.1	0.4	1.0	4	13	41	130	408	1,303	4,081	13,034	1_
Greater than $\frac{1}{4}$ to $\frac{1}{2}$	135	0	0.05	0.2	0.7	2	7	20	65	204	652	2,041	6,517	2
Greater than $\frac{1}{2}$ to 1	10(07	0	0.02	0.1	0.3	1	3	10	33	102	326	1,020	3,258	(.0)

# SOIL EXPOSURE PATHWAY WORKSHEET (concluded)

WASTE CHARACTERISTICS	
10. Assign the hazardous waste quantity score calculated for soll exposure HRS Section 5.1.2.2 and HRS table 5-2.	/13
11. Assign the highest toxicity value from SI Table 16 300	<b>\</b>
Multiply the toxicity and hazardous waste quantity scores. Assign the Waste Characteristics score from the table below:    Product	WC = \ '
(Likelihood of Exposure, Question 1; LEXTXWC Targets = Sum of Questions 2, 3, 4, 5, 6)	0
NEARBY POPULATION THREAT SCORE:  (Likelihood of Exposure, Question 7;  Targets = Sum of Questions 8, 9)  LEXTXWC  -82,500	<i>O</i> .
SOIL EXPOSURE PATHWAY SCORE: Resident Population Threat + Nearby Population Threat % 우리,500	(Maximum of 100)

### AIR PATHWAY

### Air Pathway Observed Substances Summary Table

On SI Table 21, list the hazardous substances detected in air samples of a release from the site. Include only those substances with concentrations significantly greater than background levels. Obtain benchmark, cancer risk, and reference dose concentrations from SCDM. For NAAQS/NESHAPS benchmarks, determine the highest percentage of benchmark obtained for any substance. For cancer risk and reference dose, sum the percentages for the substances listed. If benchmark, cancer risk, or reference dose concentrations are not available for a particular substance, enter N/A for the percentage. If the highest benchmark percentage or the percentage sum calculated for cancer risk or reference dose equals or exceeds 100%, evaluate targets in the distance category from which the sample was taken and any closer distance categories as Level I. If the percentages are less than 100% or all are N/A, evaluate targets in that distance category and any closer distance categories that are not Level I as Level II.

# SI TABLE 21: AIR PATHWAY OBSERVED RELEASE SUBSTANCES

	Sample ID:		Lo	vellL	evel II	Distance from S	Sources (mi)	References	
	Hazardous Substance	Conc. (µg/m³)	Gaseous Particulate	Benchmark Conc. (NAAOS or NESHAPS)	% of Benchmark	Cancer Risk Conc.	% of Cancer Risk Conc.	RID	% of RfD
		Highest Toxicity/ Mobility		Highest Percent		Sum of Percents		Sum of Percents	
	Sample ID:		L	evel IL	_evel	Distance from S	Sources (ml)	References	
2	Hazardous Substance	Conc. (µg/m³)	Toxicity/ Mobility	Benchmark Conc. (NAAQS or NESHAPS)	% of Benchmark	Cancer Risk Conc.	% of Cancer Risk Conc.	RiD	% of RID
43									
		Highest Toxicity/ Mobility		Highest Percent		Sum of Percents		Sum of Percents	
	Sample ID:		L	evelll		Distance from 5	Sources (mi)	References	
	Hazardous Substance	Conc. (μg/m³)	Taxicity/ Mobility	Benchmark Conc. (NAAQS or NESHAPS)	% of Benchmark	Cancer Risk Conc.	% of Cancer Risk Conc.	RID	% of RID
		Highest Toxicity/ Mobility		Highest Percent		Sum of Percents		Sum of Percents	

# AIR PATHWAY WORKSHEET

	_	Data	
LIKELIHOOD OF RELEASE	S∞re	Туре	Reis
1. OBSERVED RELEASE: If sampling data or direct observation	.		
support a release to air, assign a score of 550. Record observed	a		1
release substances on SI Table 21.			<del> </del>
2. POTENTIAL TO RELEASE: If sampling data do not support a	*		1
release to air, assign a score of 500. Optionally, evaluate air	1 4 4		ļ
migration gaseous and particulate potential to release (HRS Section 6.1.2).			
<u> </u>			
1.5	R =	ł	
TARGETS	`` = L	4	
3. ACTUAL CONTAMINATION POPULATION: Determine the numb	206	<del>1 1</del>	
of people within the target distance limit subject to exposure from			
release of a hazardous substance to the air.	'' a	1 1	
release of a flazaroous substance to the all.			
a) Level I: neonle v 10 -	1		
a) Level I: people x 10 = Total	_	1	
by covernpeople x 1 =	-1	1 1	- 1
4. POTENTIAL TARGET POPULATION: Determine the number of		1	
people within the target distance limit not subject to exposure from			**
a release of a hazardous substance to the air, and assign the total		[	ſ
population score from SI Table 22. Sum the values and multiply the		1 1	ł
sum by 0.1.		1 1	
5. NEAREST INDIVIDUAL: Assign a score of 50 if there are any Lev	rel		
I targets. Assign a score of 45 if there are Level II targets but no	1	[ [	1
Level I targets. If no Actual Contamination Population exists, assignment	ign {	1 1	1
the Nearest Individual score from SI Table 22.			
6. ACTUAL CONTAMINATION SENSITIVE ENVIRONMENTS: Sum	1		1
the sensitive environment values (SI Table 13) and wetland			1
acreage values (SI Table 23) for environments subject to exposur	re		1
from the release of a hazardous substance to the air.			1
			1
Sensitive Environment Type Value		{	[
			- 1
			1
			-
Wetland Acreage Value			1
			l
		[	ĺ
7 DOTENTIAL CONTAMINATION CENTRES FARIDONIALISTS:			
7. POTENTIAL CONTAMINATION SENSITIVE ENVIRONMENTS:			1
Use SI Table 24 to evaluate sensitive environments not subject to exposure from a release.	'		
<ol> <li>RESOURCES: Assign a score of 5 if one or more air resources apply within 1/2 mile of a source; assign a 0 if none applies.</li> </ol>			İ
<ul> <li>Commercial agriculture</li> </ul>			1
Commercial silviculture	<u> </u>	}	
Major or designated recreation area		1	1
The second of th	_1	]	

# SI TABLE 22 (From HRS TABLE 6-17): VALUES FOR POTENTIAL CONTAMINATION AIR TARGET POPULATIONS

ſ								Numbe	r of Peop	le within	the Distanc	e Categor	/	<del></del>		
	Distance from Site	Рор.	Nearest Individual (choose highest)	1 to 10	11 to 30	31 to 100	101 to 300	301 to 1,000	1,001 to 3,000	3,001 to 10,000	10,001 to 30,000	30,001 to 100,000	100,001 to 300,000	300,001 to 1,000,000	1,000,000 to 3,000,000	Pop. Value
	On a source	Ò	20	4	17	53	164	522	1,633	5,214	16,325	52,137	163,246	521,360	1,632,455	
	0 to $\frac{1}{4}$ mije		•	1	4	13	41	131	408	1,304	4,081	13,034	40,812	130,340	408,114	
. }	$>\frac{1}{4}$ to $\frac{1}{2}$		2	0.2	0.9	3	9	28	88	282	882	2,815	8,815	28,153	88,153	
	> 1/2 to 1	l	1	0.06	J.3,	0.9	3	8	26	83	261	834	2,612	8,342	26,119	
C-45	> 1 to 2 miles	2254	0	0.02	0.09	0.3	0.8	3	8	27	83	266	833	2,659	8,326	8
	> 2 to 3 miles	5001	0	0.009	0.04	0.1	0.4	1	4	12	38	120	375	1,199	3,755	12
	>3 to 4 miles	928	0	0.005	0.02	0.07	0.2	0.7	2	7	28	73	229	730	2,285	0.7
•		Nearest							<del></del>						Sum =	

References	

<sup>\*</sup> Score = 20 if the Nearest Individual is within  $\frac{1}{8}$  mile of a source; score = 7 if the Nearest Individual is between  $\frac{1}{8}$  and  $\frac{1}{4}$  mile of a source.

# SI TABLE 23 (HRS TABLE 6-18): AIR PATHWAY VALUES FOR WETLAND AREA

Wetland Area	Assigned Value
< 1 acre	0
1 to 50 acres	25
> 50 to 100 acres	75
> 100 to 150 acres	125
> 150 to 200 acres	175
> 200 to 300 acres	250
> 300 to 400 acres	350
> 400 to 500 acres	450
> 500 acres	500

# SI TABLE 24: DISTANCE WEIGHTS AND CALCULATIONS FOR AIR PATHWAY POTENTIAL CONTAMINATION SENSITIVE ENVIRONMENTS

Diatanas	Distance	Sensitive Environment Type and	Deadoot
Distance	Weight	Value (from SI Tables 13 and 20) 23	Product
On a Source	0.10	X	
		×	j
0 to 1/4 mile	0.025	X	
		X	
		x	
1/4 to 1/2 mile	0.0054	x	
		x	
		x	
1/2 to 1 mile	0.0016	x	
		x	
		x	
1 to 2 miles	0.0005	x	
<b>,</b>	ļ	x	
		x	
2 to 3 miles	0.00023	x	
		х .	
		X	
3 to 4 miles	0.00014	x	
	.	x	
	<u> </u>	x	
> 4 miles	0	x	· · · · · · · · · · · · · · · · · · ·

Total Environments Score =

# AIR PATHWAY (concluded)

# WASTE CHARACTERISTICS

9.	If any Actual Contamination Tar assign the calculated hazardous of 100, whichever is greater; if the Targets for the air pathway, ass sources available to air migration the minimum size require	s waste quantity soo here are no Actual ( ign the calculated H n. All Sources	ore or a score Contamination WQ score for must meet		
10.	Assign the highest air toxicity/m	obility value from Si	Table 21.		
11.	Multiply the air pathway toxicity/ quantity scores. Assign the Wa				
	table below:	WC Sorre			
	Product	WC Score		WC ≃	17
	Product 0	WC Score		WC =	\
		0 1 2		WC =	\ 7
	Product 0 >0 to <10	WC Score 0 1 2 3		WC =	\ 7
	Product 0 >0 to <10 10 to <100 100 to <1,000	0 1 2		WC ≃	Ô
	Product 0 >0 to <10 10 to <100	0 1 2 3		WC ≃	\
	Product 0 >0 to <10 10 to <100 100 to <1,000 1,000 to < 10,000	0 1 2 3 6		WC ≃	\ î
	Product 0 >0 to <10 10 to <100 100 to <1,000 1,000 to < 10,000 10,000 to <1E + 05	0 1 2 3 6 10 18 32		WC =	\
	Product 0 >0 to <10 10 to <100 100 to <1,000 1,000 to < 10,000 10,000 to <1E + 05 1E + 05 to <1E + 06	0 1 2 3 6 10 18		WC =	\ î

AIR PATHWAY SCORE:

LE X T X W C 82,500

. 2.06 (maximum of 100)

SITE SCORE CALCULATION	S	S <sup>2</sup>
GROUND WATER PATHWAY SCORE (SGW)	14.29	204.2
SURFACE WATER PATHWAY SCORE (Saw)	0,69	0.476
SOIL EXPOSURE (SS)	.0.007	0.00009
AIR PATHWAY SCORE (SA)	2.06	4.24
SITE SCORE $\sqrt{\frac{S_{GW}^2 + S_{SW}^2 + S_S^2 + S_A^2}{4}}$		7,23

COMMENTS		
Due to low target values and site score, no farther action	a	loce correct
site score, no farther action at the site.	15	LA Commodia co

SEPA	PRELIMINARY ASSESSMENT OF STATE				FICATION 02 SITE NUMBER 
II. SITE NAME AND LOCATION		<del></del>			
01 SITE NAME (Legal, common, or descriptive name of site)		02 STREE	T. ROUTE NO , OR SP	ECIFIC LOCATION DENTIFIER	
A thirt has been a made to the		1 / 1	i e	/ _/_/	nederal Profes
03 CITY			1		07COUNTY 08 CONG CODE DIST
1. U. (K. 1.)		TAT	37774	10 - 1100	1/07 03
C9 COORDINATES _ATITUDE LOS	NGITUDE		<del></del>		
10 DIRECTIONS TO SITE (Starting from nearest public road)					
III. RESPONSIBLE PARTIES					
C1 OWNER (if known)		02 STREE	T (Business, maining, reside	inital)	
03 C/TY :		04 STATE	05 ZIP CODE	G6 TELEPHONE NUMBER	
O7 OPERATOR vit known and different from owners		OB STREE	(Business, maning, reside	Pritied	
69 CITY		10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER	*
13 TYPE OF OWNERSHIP (Check 600).  ☑ A. PRIVATE □ B. FEDERAL:	(Agency name)		_ C. STATE	ID.COUNTY I E. ME	INICIPAL
☐ F. OTHER:(Speci	77)		_ 🗆 G. UNKNOY	VN	
A. RCRA 3001 DATE RECEIVED MONTH DAY YEAR		ED WAST	E SITE: <i>gergla</i> 103 c.	DATE RECEIVED WONTH	DO NONE
☐ YES DATE HONTH DAY YEAR ☐ E.	eck at met apply)  EPA	CIAL I			CONTRACTOR
02 SITE STATUS (Check off).  □ A. ACTIVE □ B. INACTIVE □ C. UNKNOWN	03 YEARS OF OPERA	TION	AR ENONG YEA	UNKNOW	'N
CA DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN	CRAUSOSD				31 24. B.M.
05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND	D/OR FOPULATION				
V. PRIORITY ASSESSMENT					
C1 PRIORITY FOR INSPECTION (Check one, if high or medium at checked.  A. HIGH  (https://on.required.promothy)  (https://on.required.promothy)	COMMOND PART 2 - WASTE INFORM  C. LOW  (Inspect on time 4)		D. NONE	sua Conditions and incidents, action needed, complete current dispo	saion formi
VI. INFORMATION AVAILABLE FROM					
01 CONTACT	G2 OF (Agency: Organica	tioni			03 TELEPHONE NUMBER
04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORGA	NIZATION	07 TELEPHONE NUMBER	08 DATE
Myrian Maria	1 SulfYY	<u> </u>		Company (1989)	MONTH DAY YEAR

### POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT PART 2 - WASTE INFORMATION

1.76 5	State in Late
	12 SITE NUMBER
. 7%_	1XID7912177746

II. WASTE 5	TATES, QUANTITIES, AI	ND CHARACTER	RISTICS					
O1 PHYSICAL S	TATES (Check of that booky)	C2 WASTE QUAN		03 WASTE CHARACT	EA.STICS (Check de Indi	Minory		
DIA SOUD DIB POWDE DIC SLUDGE	C E SLURRY R, FINES C F LIQUID E C G GAS	TONS	of weste quantities s vidependent.	CIA TOXIO DE SOLUBLE CIB CORROSIVE DE INFECTIOUS CIC. RADIOACTIVE DIG FLAMMABLE CID PERSISTENT DIH KONITABLE		OTIOUS LLEXPLO MMABLE LK BEACT TABLE LL INCOM	LI HIGHEY VOLATIES LI EKPLOSIVE DIK REACTIVE DIL INCOMPATIBLE	
⊇ 0 OTHER	(Soecity)	1				C M NOT APPLICABLE		
III, WASTE T	YPE	<u> </u>		1				
CATEGORY	SUBSTANCE N	AME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS			
SLU	SLUDGE		<del>†</del>					
OLW	OILY WASTE	<del></del>						
SOL	SOLVENTS		<del>                                     </del>				··· ···	
PSD	PESTICIDES							
occ	OTHER ORGANIC CI	HEMICALS					**************************************	
юс	MORGANIC CHEMIC	ALS						
ACD	ACIDS	1	İ					
BAS	BASES							
MES	HEAVY METALS							
IV, HAZARDO	DUS SUBSTANCES (S44 A	ppenaix for most frequer	им сива САS митовлят					
D1 CATEGORY	02 SUBSTANCE N	AME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD		05 CONCENTRATION	06 MEASURE OF CONCENTRATION	
							(	
				ļ				
				_				
1			1					
			!					
							:	
			!					
							i	
7								
V. FEEDSTO	CKS (See Appendix for CAS humb	9/11	<u> </u>				<u> </u>	
CATEGORY	01 FEEDSTOC	K NAME	02 CAS NUMBER	CATEGORY	01 FEEDST	OCK NAME	02 CAS NUMBER	
FDS		<del></del>		FDS				
FDS				FDS				
FDS		<del></del>		FDS				
FDS				FDS				
VI. SOURCES	OF INFORMATION ICAR	soechic reterences, a.g.	, Ilate Het, sample analysis, i	epons )		····-·		
Par	t A applica	nute						

### POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT

1 STATE	CO SITE	NUMBER	ą

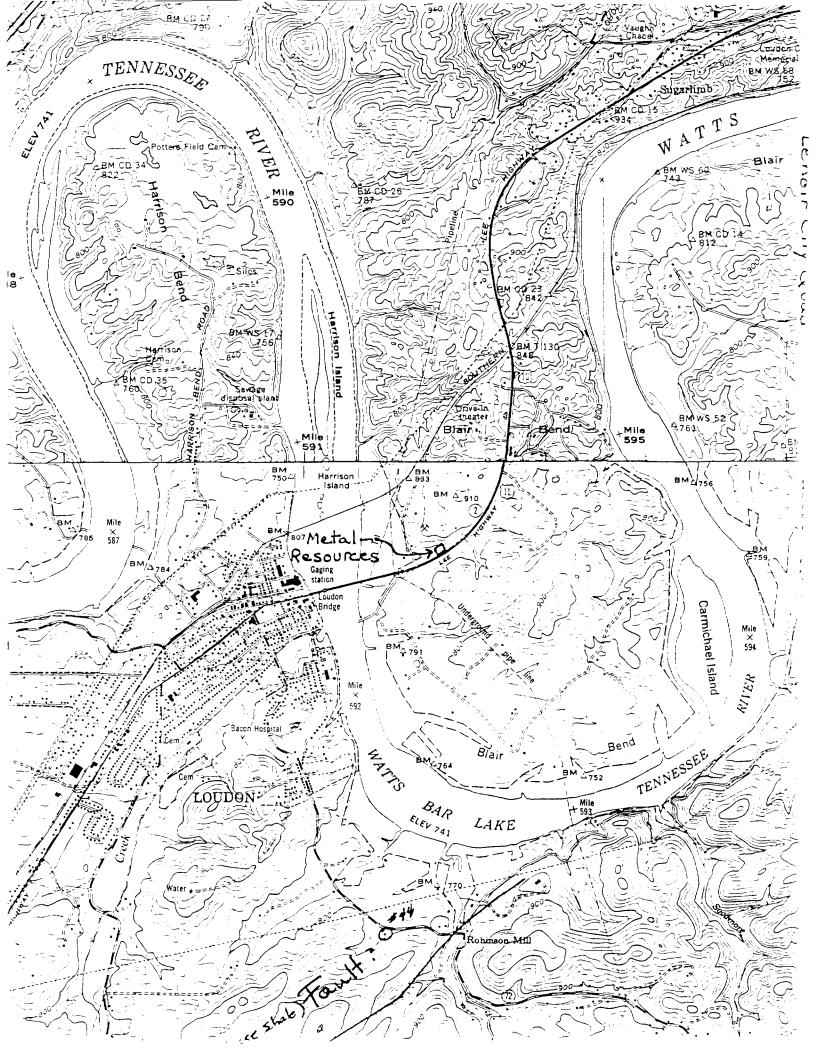
II. HAZARDOUS CONDITIONS AND INCIDENTS				
01 _ A GROUNDWATER CONTAMINATION 03 POPULATION POTENTIALLY AFFECTED:	C2 G OBSERVED (DATE)  04 NARRATIVE DESCRIPTION	1	I POTENTIAL	C ALLEGED
01 TIB SURFACE WATER CONTAMINATION 03 POPULATION POTENTIALLY AFFECTED	02 TIOBSERVED (DATE)  C4 NARRATIVE DESCRIPTION	J	☐ POTENTIAL	II ALLEGED
01 DIC CONTAMINATION OF AIR 03 POPULATION POTENTIALLY AFFECTED.  :	02 TOBSERVED (DATE	)	□ POTENTAL	☐ ALLEGED
C1 C D. FIRE/EXPLOSIVE CONDITIONS 03 POPULATION POTENTIALLY AFFECTED	02 T OBSERVED (DATE:		C POTENTIAL	□ ALLEGED
01 T.E. DIRECT CONTACT 03 POPULATION POTENTIALLY AFFECTED	02 OBSERVED (DATE:04 NARRATIVE DESCRIPTION	}	□ POTENTIAL	I ALLEGED
01 T.F. CONTAMINATION OF SOIL 03 AREA POTENTIALLY AFFECTED (Acres)	02 ☐ OBSERVED (DATE	)	C POTENTIAL	□ ALLEGED
01 G. DRINKING WATER CONTAMINATION 03 POPULATION POTENTIALLY AFFECTED	02 TOBSERVED (DATE	)	□ POTENT AL	_ ALLEGED
3: ZH WORKER EXPOSURE/INJURY 33 WORKERS POTENTIALLY AFFECTED:	02 © OBSERVED (DATE	)	☐ POTENTIAL	I ALLEGED
CT I POPULATION EXPOSURE/INJURY SC POPULATION POTENTIALLY AFFECTED.	02 C OBSERVED (DATE	)	☐ POTENTIAL	□ ALLEGED

**\$EPA** 

# POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT

1.	IDENT	IFICATION
01	STATE	02 SITE NUMBER
	18	11/31/2019/12/19/6

PART 3 - DESCRIPTION OF HA	ZARDOUS CONDITIONS AND INCI	DENTS	5 L.	
II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)				
01 © J. DAMAGE TO FLORA 04 NARRATIVE DESCRIPTION	02 C OBSERVED (DATE.	)	D POTENTIAL	C ALLEGED
01 T.K. DAMAGE TO FAUNA 04 NARRATIVE DESCRIPTION (Include name(s) of species)	02 C OBSERVED (DATE:	)	E POTENTIAL	C ALLEGED
01 ☐ L CONTAMINATION OF FOOD CHAIN 04 NARRATIVE DESCRIPTION	02 © OBSERVED (DATE.	)	O POTENTIAL	C ALLEGED
01 C. M. UNSTABLE CONTAINMENT OF WASTES (Saffininal/Estanding equasivering drums) 03 POPULATION POTENTIALLY AFFECTED:	02 OBSERVED (DATE:04 NARRATIVE DESCRIPTION		C POTENTIAL	C ALLEGED
01 TIN DAMAGE TO OFFSITE PROPERTY 04 NARRATIVE DESCRIPTION	02 C OBSERVED (DATE.	)	O POTENTIAL	S ALLEGED
01 © 0. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs 04 NARRATIVE DESCRIPTION	02 G OBSERVED (DATE:	}	Z POTENTIAL	C ALLEGED
01 © P. ILLEGAL UNAUTHORIZED DUMPING 04 NARRATIVE DESCRIPTION 7	02 G OBSERVED (DATE:	_)	I POTENTAL	I ALLEGED
05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEG	ED HAZARDS			
III. TOTAL POPULATION POTENTIALLY AFFECTED:				
IV. COMMENTS				
		··		
V. SOURCES OF INFORMATION (Cité specific reterences, e.g., state (res. s	amore enaivsis, reogris)			



Metal Resources

-Talked to Marty Hertzel

- Knoxville .DSWM at site in August 83 - No hazardous waste

- Directions

From Knoxville: I40-75 west

Take 75 south

Exit on Sugar Lem Road

Froceed East till road deadends into U.S. 11

Head towards Loudon, go - I mile to small business area

Site is a white building (old cardealership)

Texaco across street

If you cross a bridge in the business area you've gone too far

# TENNESSEE DEPARTMENT OF HEALTH AND ENVIRONMENT OFFICE CORRESPONDENCE DATE: June 14, 1984 Reference 2 TO: THE FILES FROM: Kerneth R. Davis SUBJECT: \$3012 Program - Site Investigations

Metal Resources, Incorporated

# METAL RESOURCES, INCORPORATED

On June 8, 1984, Metal Resources, Incorporated of Loudon, Tennessee was visited by Karen Bonner and Ken Davis. Mr. Marty Hertzel, President of Metal Resources, was contacted prior to the inspection ir order to obtain permission to enter the site. During the visit we met with Mrs. Pat Hertzel, Secretary, Mr. Freeman Russel, Plant Supervisor, and Mr. Luther James, Shift Supervisor.

Metal Resources refines scrap aluminum. On-site operations did not begin until 1981. Before Metal Resources' refinery was built, the land was undeveloped farm and forest land.

Because of the relatively recent start date of Metal Resources and the lack of a past history of development, this site does not fall most the regulation of the §3012 Program. No attempt was made to inspect the refinery or the surrounding grounds.

Based on this inspection, it is felt that  ${\hbox{NO FURTHER ACTION}}$  is required under the §3012 Program.

KRD/tad

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<b>SEPA</b>
J. SITE NAME AND L
IT SITE NAME 100 1 FF

# POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

I. IDENT	IFICATION	
U1 STATE	D2 SITE NUMBER	_
$\pm T N$	169912791	

PART 1 - SITE	SITE INSPECTION INSP ELOCATION AND INSP		TION TA	<u> </u>
J. SITE NAME AND LOCATION				
ULSITE NAME AND LOCATION US TENAME OUT OF THE PROPERTY.	Top STR	EET POUTE NO DRISPE	CIFIC LOCATION DENTIFER	
The second second in	1 '			
33 C. 74	C4 STA	15   US AP COUE   1	JB CCUN : Y	U7C00NF4 38 CC36
2 3	1.7		er Congress of the	CODE DIST
SO COORDINATES  ARTHURE  ARTHURE  ARTHURE  CHARLES  CHARL	TO TYPE OF OWNERSHIP CHARLES A PRIVATE 18.8	EDERAL	C STATE I D COUNTY	
III. INSPECTION INFORMATION				
OF DATE OF NUMEDIAGN DO SITE STATUS TO ACTIVE	03 YEARS OF OPERATION			
BVFOAR C CONTENTS OF ACTIVE	BE NO MORE	1		
LAGEN TO SENDEMING MERCOT DN THERAPPRISE A	Se silvening .	240177 241		
. A EPA () B EPA CONTRACTOR	TO I	MUNICIPAL I D. MU	NICIPAL CONTRACTOR	Name of Sens
X = STITE = STITE CONTRACTOR		RBHTC		Name of form
7 353-485 NSESSTOR	06 TITLE		Specify 07 ORGANIZATION	TOB TELEPHONE NO
Take a second control of			War Part	(100 ) 140 1 We
09 OTHER INSPECTORS	10 TITLE		11 ORGANIZATION	12 TELEPHONE NO
To the second of				( 1. 1. )
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18 BYTE PEPPE (BNT474,68 NTBAVENED	:4 TILE /	'5ACCRESS	<u></u>	16 TELEPHONE NO
		7000	enter the analysis	(1,24)
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				1
17 ACCESS GAINED BY 18 TIME OF INSPECTION	19 WEATHER CONDITIONS			· · · · · · · · · · · · · · · · · · ·
▼ PERMISSION  I WARRANT  WARRANT	Same Same	ng for wire	Arren 1	
V. INFORMATION AVAILABLE FROM	<u> </u>	<del>- f</del>		
DI CONTACT	02 OF Agency Organizations			3 TELEPHONE NO
MIC. MESON SIBLE FOR SITE INSPECTION FORM	Metal Re	Source St.	C. a	1661458 Da 7
04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY 06 OR	GANIZATION	07 TELEPHONE NO.	B DATE
75 CAN 11 11 11 11 11 11 11 11 11 11 11 11 11	Metal Re OS AGENCY OG OR TENN DENT D Heard E.		249741-6287	MONTH CAN YEAR
PA FORM 2070 13 (7.81	**************************************			1

### POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 2 - WASTE INFORMATION

i I, ID	ENT	TFIC	AT	ON		
j .	4 E	02.0	- 5	LMS	ΕÐ	
	100	17:	, 7	100	12	74

	1		PART 2 - WAST	EINFORMATION			210 <u>7274</u>
		0.014.04.0750					
II. WASTE STATES		D CHARACTER		20 024675 05 10 10 175	ERISTICS (International Indianation		
A SOLD B POWDER FINE	E SELAAY	Measones nosnos TONS	ut waste quantities Eindenanden	LA TOXIO B CARCO B CARONA C PACIDA	_ E SCLJ <b>a</b> l£	, I HIGHL US J EKPLO BLE J K BEAC	DSN E
ב אפרדכ מ	Scec .			M NOT APPL			
III. WASTE TYPE				<del>i</del>	<del></del>		
CATEGORY	SUBSTANCE N	AME	DI GROSS AMOUNT	02 UNIT OF MEASURE!	33 COMMENTS		
SEL	SEUDGE						
OUW	OILY WASTE						
SOL	SOLVENTS				· · · · · · · · · · · · · · · · · · ·		
PSO I	PESTIC DES						
occ	OTHER ORGANIC CH	IEMICALS					
100	NORGANIC CHEMIC	ALS					
ACD	ACIOS						
BAS	BASES						
MES I	HEAVY METALS						
IV. HAZARDOUS S	UBSTANCES See AC	penaix for most frequen	livicited CAS Numbers.				
OT CATEGORY	D2 SUBSTANCE NA	ME	03 CAS NUMBER	04 STORAGE DISP	OSAL METHOD 0	5 CONCENTRATION	C6 MEASUPE C CONCENTRATIO
<u> </u>			1				i
•							
	·	-			!		
i					<u> </u>		
	·						i
: 	···- · · · · · · · · · · · · · · · · ·						<u> </u>
i					İ		
. FEEDSTOCKS .s.	• Appendix for CAS Number	·\$1	·				
CATEGORY	01 FEEDSTOCK	NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK	NAME	02 CAS NUMBER
FDS				FDS		<del></del>	
FDS				FDS		· · · · · · · · · · · · · · · · · · ·	
FDS				FDS		<del></del>	
	······································			FDS			
FDS			. 1				

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PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

			. <u> </u>	_
II. HAZARDOUS CONDITIONS AND INCIDENTS				
01 A. GROUNDWATER CONTAMINATION	02 TOBSERVED (DATE	_ POTENTIAL	_ ALLEGED	_
03 POPULATION POTENTIALLY AFFECTED:			- ACCEOED	
SO FOR SEATION OF CHARLET AFF 25 YES				
01 T B. SURFACE WATER CONTAMINATION	02 TOBSERVEDIDATE	_) DOTENTIAL	☐ ALLEGED	
03 POPULATION POTENTIALLY AFFECTED	04 NARRATIVE DESCRIPTION			
	<del></del>			
	44 7 00050 50 0 75			_
01 T. C. CONTAMINATION OF AIR 03 POPULATION POTENTIALLY AFFECTED.	02 T OBSERVED (DATE:	_ : I POTENTIAL	I ALLEGED	
03 POPULATION POTENTIALLY AFFECTED.	04 NARRATIVE DESCRIPTION			
			•	
				_
01 T D. FIRE EXPLOSIVE CONDITIONS	02 C OBSERVED (DATE.	POTENTIAL	C ALLEGED	_
03 POPULATION POTENTIALLY AFFECTED:		<b></b> <i>,</i>		
	40 E 00050 10175			
01 Z E. DIRECT CONTACT	02 TOBSERVED (DATE:	I POTENTIAL	I ALLEGED	
03 POPULATION POTENTIALLY AFFECTED.	04 NARRATIVE DESCRIPTION			
v				
•				
01 T F CONTAMINATION OF SOIL	02 TOBSERVED (DATE:	_) = DOTENTIAL	I ALLEGED	
03 AREA POTENTIALLY AFFECTED	04 NARRATIVE DESCRIPTION			
Acresi				
•				
				_
01 T.G. DRINKING WATER CONTAMINATION	02 TOBSERVED (DATE:	_) _ POTENTIAL	I ALLEGED	
03 POPULATION POTENTIALLY AFFECTED:	04 NARRATIVE DESCRIPTION			
01 TH. WORKER EXPOSURE INJURY	02 C OBSERVED (DATE:	) = POTENTIAL	☐ ALLEGED	
03 WORKERS POTENTIALLY AFFECTED:	04 NARRATIVE DESCRIPTION			
	N.			
O4 TI DODINATION EVOCATION IN THE	00 C 00000 150 151		- N	_
01 T. POPULATION EXPOSURE/INJURY 03 POPULATION POTENTIALLY AFFECTED.	02 C OBSERVED (DATE:	_1 □ POTENTIAL	I ALLEGED	
US FORULATION POTENTIALLY AFFECTED.	04 NARRATIVE DESCRIPTION			

# POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

Ĺ		IFICATION	
01	STATE	02 SITE NUMBER	
_	IN.	N941074	74.

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

II. HAZARDOUS CONDITIONS AND INCIDENTS   Jantinuary				<del></del>
01 I J DAMAGE TO FLORA 04 NARRATIVE DESCRIPTION	02 T OBSERVED (DATE	· · · · · · · · · · · · · · · · · · ·	_ POTENTIAL	_ ALLEGED
01 I K. DAMAGE TO FAUNA	02 - OBSERVED (DATE	1	POTENTIAL	
04 NARRATIVE DESCRIPTION Include name(s, of species				
01 I L. CONTAMINATION OF FOOD CHAIN 04 NARRATIVE DESCRIPTION	02 TOBSERVED (DATE.	)	_ POTENTIAL	_ ALLEGED
:				
01 M. UNSTABLE CONTAINMENT OF WASTES Spills Punol' Standing rouds, Leaking drums; 03 POPULATION POTENTIALLY AFFECTED:	02 _ OBSERVED (DATE	)	_ POTENTIAL	_ ALLEGED
00 / 01 00	or managed and the			
01 IN DAMAGE TO OFFSITE PROPERTY 04 NARRATIVE DESCRIPTION	02 TOBSERVED (DATE:	1	_ POTENTIAL	_ ALLEGED
·				
01 TO CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs 04 NARRATIVE DESCRIPTION	02 TOBSERVED (DATE.	)	_ POTENTIAL	I ALLEGED
01 T P ILLEGAL UNAUTHORIZED DUMPING 04 NARRATIVE DESCRIPTION	02 T OBSERVED (DATE:	)	T POTENTIAL	_ ALLEGED
05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEG	ED HAZARDS			
III. TOTAL POPULATION POTENTIALLY AFFECTED:				
IV. COMMENTS				
V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, s.	ample analysis, reports)			
•				
	i i			

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1	<del>}-</del> 1	
~		1 1

# POTENTIAL HAZARDOUS WASTE SITE

I. IDENT	TFICATION
O' STATE	02 SITE NUMBER

PART 4 - PERMIT AND DESCRIPTIVE INFORMATION  II. PERMIT INFORMATION  O1 TYPE OF PERMIT ISSUED Check as and addition  TAIN NODES  TAIN NODES  TAIN NODES  TAIN TO RORA  TO RORA  TO RO	01 STATE 02 SITE NUMBER 1777 17 17 17 17 17 17 17 17 17 17 17 1					
II. PERMIT INFORMATION	MIT INFORMATION  37 FERMIT AND DESCRIPTIVE INFORMATION  37 FERMIT STATUS  100 DESCRIPTION  101 DESCRIPTION  102 FERMIT VAMBER  103 DETENSUED  105 COMMENTS  106 DESCRIPTION  107 FERMIT STATUS  108 DESCRIPTION  109 STATE SELECT  100 DESCRIPTION					
01 TYPE OF PERMIT ISSUED Check an inal acoly)	02 PERMIT SUMBER	03 DATE	SSUED 04	4 EXPIRATION DATE	05 COMMENTS	,
1						
IC. AIR						
_ D. RCRA						
				······································		
				<u> </u>		
				!	<u> </u>	
<del></del>						
<del></del>						
III. SITE DESCRIPTION	CONTRACTOR OF UNIT (	OF LIEACURE	TOFA	TLACET Change of their		Theother
	02 AMOUNT US ONE C	OF MEASURE 1		·	)O/YI	05 OTHER
☐ A. SURFACE IMPOUNDMENT ☐ B. PILES			1		···	C A. BUILDINGS ON SITE
C. DRUMS, ABOVE GROUND		<del></del>				
_ D. TANK, ABOVE GROUND			i		L	
_ E. TANK, BELOW GROUND			1		SING	06 AREA OF SITE
_ F. LANDFILL _			1 .			
I G. LANDFARM		!			RECOVERY	(Acres,
I H. OPEN DUMP		/	☐ H. OTI		-citu	
I LOTHER		I	•	- <del>-</del>	jity .	
IV. CONTAINMENT	**************************************					
01 CONTAINMENT OF WASTES Chack one:						
≟ A. ADEQUATE, SECURE	I B. MODERATE	I C. IN	IADEQUAT	E. POCR	I D. INSECU	JRE. UNSOUND, DANGEROUS
02 DESCRIPTION OF DRUMS, DIKING, LINERS, E	BARRIERS, ETC					
· 		- <u></u>				
V. ACCESSIBILITY						
01 WASTE EASILY ACCESSIBLE. YES	3 I NO		-		,	
VI. SOURCES OF INFORMATION (CITE 50)	necilio references, e o state files, sami	nie analysis, repo	nrts)			
11.00011020 31 111 211111111111111111111111						
		•				

# POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

I. IDENTIFICATION

31 STATE 02 SITE NUMBER

TN N991074740

PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

01 PERMEABILITY OF UNSATURATED 2	ONE Check one:			
⊒ A. 10~5 ~ 10~	$\frac{1}{3}$ cm/sec $\frac{1}{2}$ 8 10 <sup>-4</sup> - 10 <sup>-5</sup>	cm-sec = E C. 10 <sup>-4</sup>	- 10-1 cm-sec	110 <sup>-3</sup> cm sec
O2 PERMEABILITY OF BEDROCK Chacker shape:  CA :MPERMEABLE				
C6 NET PRECIPITATION  O7 ONE YEAR 24 HOUR RAINFALL  SITE IS ON BARRIER ISLAND. COASTAL HIGH HAZARD AREA. RIVERINE FLOODWAY  11 DISTANCE TO WETLANDS 73 sere monitors  ESTUARINE  A				
03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOI	L ZONE	05 SOIL oH	
DA IMPERMEABLE Less wan 10-73 cm sec: De RELATIVELY IMPERMEABLE DE CONTROL DE				
3   PERMEABILITY OF UNSATURATED TONE C				
(in)		ļ	1	1
09 FLOOD POTENTIAL	1.0			
SITE IS IN YEAR FLO	ODPLAIN I SITE I	IS ON BARRIER ISLAND	), COASTAL HIGH HAZARD AREA, RIVE	RINE FLOODWAY
11 DISTANCE TO WETLANDS 15 acre mount	umi	12 DISTAN	GE TO CRITICAL HABITAT (of encangered specie	\$:
ESTUARINE	OTHER			_ (mı)
A(mi)	B(mi)	EN	DANGERED SPECIES:	
13 LAND USE IN VICINITY		· · · · · · · · · · · · · · · · · · ·		
7,07,1,05,70	•			
DISTANCE TO:	### TO PERMONE CONTROL OF THE PROPERTY OF A STEEL OF THE PROPERTY OF SERVICE CONTROL OF STEEL OF THE PROPERTY OF SERVICE CONTROL OF STEEL OF THE PROPERTY OF SERVICE CONTROL OF STEEL OF THE PROPERTY OF THE PROPERTY OF THE PROPER			
COMMERCIAL INDUSTR				
, A(mi)	8	. (mi)	C(mi)	D(mi)
			·	
14 DESCRIPTION OF SITE IN RELATION T	O SURHOUNDING TOPOGRAPHY			i
DISTANCE TO  COMMERCIAL INDUSTRIAL  RESIDENT				
A IMPERMEABLE 3 RELATIVELY IMPERMEABLE C RELATIVELY PREMEABLE DU VERY PERMEABLE OF V				
	ABULTY OF PURSATURATED TONE CHARGE. B 1011 - 1011 om sec. C 1014 - 1011 om sec. D GREATER THAN 1011 om sec.  ABULTY OF BEBROCK CHARGE.  DA MPERMEABLE  LANDREY C 7 OM SEC.  DA MPERMEABLE  LANDREY C 7 OM SEC.  DA MPERMEABLE  LANDREY C 7 OM SEC.  DA MPERMEABLE  LANDREY C 7 OM SEC.  DA MPERMEABLE  LANDREY C 7 OM SEC.  DA MPERMEABLE  LANDREY C 7 OM SEC.  DA MPERMEABLE  D VERY PERMEABLE  D VER			
				SLOPE TERRAIN AVERAGE SLOPE
VII. SOURCES OF INFORMATION	Cita spacific retargences and state tiles of	samble analysis (annots)		
Julian de la competition				
2 PERMEABILITY OF BEDROCK CHARLES AND THE STATE OF THE ST				
PREMEABLITY OF INSATINATED CONC. CHARLES   2   10"   - 10"   CHARLES   C.   10"   10"   CHARLES   C.   D. GREATER THAN 10"   CHARLES    2 PERMEABILITY OF REDDOCK   CHARLES   CHARLES   C.   C.   C.   C.   C.   C.   C.   C				

# POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

1. IDENTIFICATION  OF STATE OF STEENUMBER  TALL STATE OF STEENUMBER			
	77/	11/11/11/11/11/71	417

PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

II. DRINKING WATER SUPPLY							
01 TYPE OF DRINKING SUPPLY (Check as applicable)		02 STATUS				0:	3 DISTANCE TO SITE
		1	ED AFF	ECTED	MONITORED		
COMMUNITY A. I	8. =	A. =			c. =		
NON-COMMUNITY C. I	D. 🗆	0. 🗆	E	. <u> </u>	F. 3	8.	(mi)
III. GROUNDWATER		-					
01 GROUNDWATER USE IN VICINITY Chec.	SURFACE WELL ENDANGERED AFFECTED MONITORED  SURFACE WELL ENDANGERED AFFECTED MONITORED  A						
C A ONLY SOURCE FOR DRINKING	Other sources available COMMERCIAL, IN	NDUSTRIAL, IRRIGATIO	2	COMMERCIAL, Limited other sour	, NOUSTRIAL, IRRIGAT rces avanable	ION	I D. NOT USED, UNUSEABLE
02 POPULATION SERVED BY GROUND WA	R3T/	_	OJ DISTANO	CE TO NEARES	ST DRINKING WATER \	WELL	(mi)
04 DEPTH TO GROUNDWATER	05 DIRECTION OF GRO	OUNDWATER FLOW				٥	08 SOLE SOURCE AQUIFER
,,,,			OF CON		OF AQUIFER		□ YES □ NO
				(n)		_{gpd1	
10 RECHARGE AREA			1	1			
			,	COMMENT	rs		
□ NO			_ NO				
IV. SURFACE WATER							
01 SURFACE WATER USE (Check one)							
A. RESERVOIR, RECREATION DRINKING WATER SOURCE			⊒ c. (	COMMERCIA	AL. NOUSTRIAL	<u> </u>	D. NOT CURRENTLY USED
02 AFFECTED/POTENTIALLY AFFECTED B	ODIES OF WATER						
NAME:					AFFECTED		DISTANCE TO SITE
					_		/ mu
					-	_	
						_	
V DEMOGRAPHIC AND PROPERT	VINEORMATION					_	
01 TOTAL POPULATION WITHIN	THE OTHER TOTAL	<del></del>		1 02	DISTANCE TO NEARE	ST POPU	ILATION
	VO 20 MILES OF SITE	THREE /3	N 1411 ES OE	1		-	
	_		I WILES OF	31.6			(mi)
			OF PERSONS	<u>;                                    </u>			
03 NUMBER OF BUILDINGS WITHIN TWO (2)	MILES OF SITE		04 DISTANC	E TO NEARES	T OFF-SITE BUILDING		
						(r	ni)
05 POPULATION WITHIN VICINITY OF SITE.	Provide narrative description of r	nature of population within v	cunity of site. e.ç	j. rural, village, di	ensely copulated urban are.	a)	
		•					•

		POTENTIAL HAZARDOUS WASTE SITE	I. IDENTIFIC	
SEPA		SITE INSPECTION REPORT PART 6 - SAMPLE AND FIELD INFORMATION	OI STATE CZ	991279
II. SAMPLES TAKEN				
SAMPLE TYPE	CT NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO		00 ESTIMATED CAPE RESULTS AVAILABLE
GROUNDWATER				
SURFACE WATER				
WASTE				
AIR				
RUNOFF				
SPILL				
SOIL				
VEGETATION				
OTHER				
III. FIELD MEASUREMENTS TA	KEN			
O1 TYPE	02 COMMENTS			
IV. PHOTOGRAPHS AND MAPS				
DI TYPE I GROUND I AERIAL		02 IN CUSTODY OF	nı	
03 MAPS 34 LOCATION	CF MAPS			
Z NO	TED States			
T. OTHER PIELD DATA COLLEC	37 CD - Svice namalive de:	s. anani		
		,		
VI. SOURCES OF INFORMATIO	N (Cité specific references : 6	e a. State "les sample analysis, reportsi		
		<del></del>		

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37	 -1

# POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

	FICATION
CISTATE	02 SITE NUMBER
7	N 30 10 7070

II. CURRENT OWNER(S)			PARENT COMPANY - Nonada			
OT NAME		02 D+8 NUMBER	BER 08 NAME		09 0 + B NUMBER	
1/16 + 6 + 1 + 1 + 2 + 2 + 1 + 1 + 2 + 3 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1						
03 STREET ACCRESS - 1 401 950 + 415	<del></del>	04 SIC CODE	10 STREET ADDRESS P C Box AFE	O + aic	11 SIC CODE	
Blee Bend Jud. 1407	P.C. F. C.	80				
25 C.TY	DE STATE	07 ZIP CODE	12 CITY	13 STATE 14	ZIP CODE	
Looden	TT rj	スファフター				
C1 NAME		02 D - B NUMBER	SMAN BC	cs	0+8 NUMBER	
03 STREET ADDRESS A STEAM AFT # 440	· · · · · · · · · · · · · · ·	04 SIC CODE	TO STREET ADDRESS = 3 201 450	2 4 412	11 SIC CODE	
05 7.X ·	Ge 37475	OF ZIR CODE	12 5177	13 STATE 14	ZIP CODE	
OT NAME		02 0 - B NUMBER	OBNAME	03	D+5 NUMBER	
	•			1		
D3 STREET ADDRESS 0. Box. RFD # erg	*	04 SIC CODE	10 STREET ADDRESS IP O BOX. REC	) = etc.;	11 SIC CODE	
÷						
DE CITY	O6 STATE	07 ZIP CODE	12 CiTY	13 STATE 14	ZIP CODE	
	ĺ					
DI NAME		02 D+8 NUMBER	OB NAME	09	D+8 NUMBER	
03.9TPEET 4009ESS # 0 84, 950 / 460		04 SIC CCCE	10 STREET ADDRESS -2 0 Box. RED	• 410	1 : SIC CODE	
		ļ				
35 d. <sup>‡</sup> . ►	US STATE	37 ZIP CODE	12 CITY	13 STATE 14	ZIP CODE	
	-					
III. PREVIOUS OWNER(S) .t.si most recer	<del></del>	<u> </u>	IV. REALTY OWNER(S) of appl	ucanie: us: most recent firsti		
O1 NAME		02 D+B NUMBER	01 NAME		0+8 NUMBER	
33 STREET ADDRESS P O BOX FF3 + HE .		04 SIC CCDE	03 STREET ADDRESS /P O. Box AFD # 91C :		04 SIC CODE	
05 C:TY	06 STATE	07 ZIP CODE	05 CITY	06 STATE 07	ZIP CODE	
) NAME		02 D+B NUMBER	01 NAME	02	D+8 NUMBER	
3 STREET ADDRESS P 0 804 PFD * etc		04 SIC CODE	03 STREET ADDRESS IP 0. 30x RFD	* 91C ,	04 SIC CODE	
	1			Los or ver		
IS CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE 07	ZIP CODE	
					00	
1 NAME		02 D+8 NUMBER	01 NAME	]02	D+B NUMBER	
	i	Ta : 2:2 2025			т	
3 STREET ADDRESS (P.O. Box, RFD # etc.)		04 SIC CODE	03 STREET ADDRESS (P.O. Box. RFD)	P. erc.J	04 SIC CODE	
e conv	70.00.00			log STATELOT	110.6685	
SCITY	06 STATE	07 ZIP COOE	05 CITY	06 STATE 07	AF CODE	
V. SOURCES OF INFORMATION (Cite	SDUCINO references. 4	g., state files, sample analysis	, reports)	···		

<b>≎</b> EPA	P	SITE INSPE	ARDOUS WASTE SITE		FICATION 2 SITE NUMBER 3-11274
		PART 8 - OPER	ATOR INFORMATION		21:105.1.1.2
II. CURRENT OPERATOR Provide 1 out	erent from owners	Y	OPERATOR'S PARENT COMPA	NY Fapricable:	
O1 VAME		02 D+8 NUMBER	10 NAME		11 D+8 NUMBER
03 STREET ADDRESS IP 0 Sox 9FD + arc		04 SIC CODE	12 STREET ADDRESS P 0 Box AFD + arc.		13 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	14017	15 STATE	16 ZIP CODE
OB YEARS OF OPERATION 09 NAME OF O	WNER	<u>[</u>			<u> </u>
III. PREVIOUS OPERATOR(S) 2.31 most	recent first: provide on	uv il different from owneri	PREVIOUS OPERATORS' PARE	NT COMPANIES	f approaprer
O1 VAME		02 D+8 NUMBER	: C NAME		110+8 NUMBER
03 STREET ADDRESS PO 301 AFD . erc .	•	04 SIC CODE	12 STREET ADDRESS (P O Box, AFD # etc.	;	13 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	15 ZIP CODE
08 YEARS OF OPERATION 09 NAME OF O	WNER DURING THI	S PERIOD			
O1 NAME		02 D+8 NUMBER	: 0 NAME	<del></del>	11 D+B NUMBER
03 STREET ADDRESS P C Box PFO . HC		04 SIC CODE	12 STREET ADDRESS 90 dos RFD . HC.		13 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	. # CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION   09 NAME OF O	WNER OURING THI	S PERIOD			
O1 NAME		02 D+B NUMBER	10 NAME		REBMUN 8+C 11
03 STREET ADDRESS P 0 30x 2FD . etc		04 SIC CODE	12 STREET ADDRESS IP 0 30x RFD = etc		13 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	1± GITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION DE NAME OF C	WNER DURING THI	S PERIOD			

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample energies, reports) EPA FORM 2070-13 (7-81)

SEPA		SITE INSP	ZARDOUS WASTE SITE ECTION REPORT TRANSPORTER INFORMATION	I. IDENTIF	ICATION 2 SITE NUMBER 3 991279
IL ON-SITE GENERATOR					
OT NAME		02 D+8 NUMBER			
03 STREET ADDRESS P.O. dor. 950 # stc.		04 SIC CCDE			
05 CITY	06 STATE	O7 ZIP CODE			
III. OFF-SITE GENERATOR(S)				···	
01 NAME		02 D+8 NUMBER	01 NAME		02 D+B NUMBER
C3 STREET ADDRESS P 2 30x 2FD + 110		04 SIC CODE	03 STREET ADDRESS P 0 30x AFO = erc		04 SIC CODE
05 GITY	C6 STATE	07 ZIP CODE	05 CITY	OB STATE	07 ZIP CODE
O1 NAME		02 D+8 NUMBER	01 NAME	<u>_</u>	02 D+8 NUMBER
03 STREET ADDRESS (2 0 Box 250 + etc.)		04 SIC CODE	03 STREET ADDRESS (P.O. Sox, RFD = 9(c.)		04 SIC CODE
05 CITY	C6 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP COOE
IV. TRANSPORTER(S)					
01 NAME	·	02 D+B NUMBER	01 NAME		02 D+B NUMBER
03 STREET ADDRESS IP O BOX PED	, K	04 SIC CODE	03 STREET ADDRESS (P 0 301 AFD # 1/c.		04 SIC CODE
05 CITY	C6 STATE	07 ZIP CCDE	05 CITY	06 STATE	07 ZIP GODE
01 NAME		02 D+B NUMBER	01 NAME		02 D+8 NUMBER

04 SIC CODE

06 STATE 07 ZIP CODE

03 STREET ADDRESS IP 0 Box. RFD # #16 /

05 CITY

94 SIC CODE

06 STATE 07 ZIP CODE

V. SOURCES OF INFORMATION -Cite specific references, e.g., state files, sample analysis, reports)

G3 STREET ADDRESS . P O. Box AFD . BIC.

05 CITY

### POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 10 - PAST RESPONSE ACTIVITIES

1. IDENTIFICATION

01 STATE 02 SITE NUMBER

TN 1594127474

<b>17</b> — 17 1	PART 10 - PAST RESPONSE ACTI	VITIES L. 174 IL2	7110-1117
II. PAST RESPONSE ACTIVITIES			
01 Z A. WATER SUPPLY CLOSED 04 DESCRIPTION	O2 DATE	03 AGENCY	**************************************
01 = B. TEMPORARY WATER SUPPLY PROVIDED OF DESCRIPTION	DED 02 DATE	03 AGENCY	
01 T.C. PERMANENT WATER SUPPLY PROVID 04 DESCRIPTION	DED 02 DATE	03 AGENCY	
01 Z D. SPILLED MATERIAL REMOVED 04 DESCRIPTION	02 DATE	03 AGENCY	
01 = E. CONTAMINATED SOIL REMOVED 04 DESCRIPTION	02 DATE	03 AGENCY	
01 _ F WASTE REPACKAGED 04 DESCRIPTION	O2 DATE	03 AGENCY	
01 I G. WASTE DISPOSED ELSEWHERE 04 DESCRIPTION	02 DATE	03 AGENCY	
01 II H. ON SITE BURIAL 04 DESCRIPTION	O2 DATE	03 AGENCY	
01 I I IN SITU CHEMICAL TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY	
01 Z J. IN SITU BIOLOGICAL TREATMENT 04 DESCRIPTION	02 DATE	O3 AGENCY	
01 Z K. IN SITU PHYSICAL TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY	
01 I L. ENCAPSULATION 04 DESCRIPTION	02 DATE	03 AGENCY	
01 I M. EMERGENCY WASTE TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY	
01 IN CUTOFF WALLS 04 DESCRIPTION	02 DATE	03 AGENCY	
01 TO, EMERGENCY DIKING/SURFACE WATER 04 DESCRIPTION	R DIVERSION 02 DATE	03 AGENCY	
01 T P CUTOFF TRENCHES/SUMP 04 DESCRIPTION	02 DATE	03 AGENCY	
01 Z Q. SUBSURFACE CUTOFF WALL 04 DESCRIPTION	02 DATE	03 AGENCY	

### POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 10 - PAST RESPONSE ACTIVITIES

ı	I. IDEN	TIFICATION
	O1 STATE	02 SITE NUMBER
	$\vdash \vdash \vdash \cap \vdash$	D99 1279741

\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	PART 10 - PAST RESPONSE ACTIVITIES	11010711611115
II PAST RESPONSE ACTIVITIES Continued.		
01 TR BARRIER WALLS CONSTRUCTED 04 DESCRIPTION	O2 DATE	03 AGENCY
01 T.S. CAPPING COVERING 04 DESCRIPTION	02 DATE	03 AGENCY
01 T BULK TANKAGE REPAIRED 04 DESCRIPTION	O2 DATE	03 AGENCY
01 I U. GROUT CURTAIN CONSTRUCTED 04 DESCRIPTION	O2 DATE	03 AGENCY
01 T V BOTTOM SEALED 04 DESCRIPTION	O2 DATE	03 AGENCY
01 TW. GAS CONTROL	O2 DATE	03 AGENCY
01 T X. FIRE CONTROL 04 DESCRIPTION	02 DATE	03 AGENCY
01 T.Y. LEACHATE TREATMENT 04 DESCRIPTION	O2 DATE	03 AGENCY
01 Z. AREA EVACUATED 04 DESCRIPTION	02 DATE	03 AGENCY
01 T 1 ACCESS TO SITE RESTRICTED 04 DESCRIPTION	02 DATE	03 AGENCY
01 T 2. POPULATION RELOCATED 04 DESCRIPTION	02 DATE	03 AGENCY
01 ] 3. OTHER REMEDIAL ACTIVITIES 04 DESCRIPTION	02 DATE	03 AGENCY

III. SOURCES OF INFORMATION Cité specific references, e.g., state lifes, sample analysis, reports

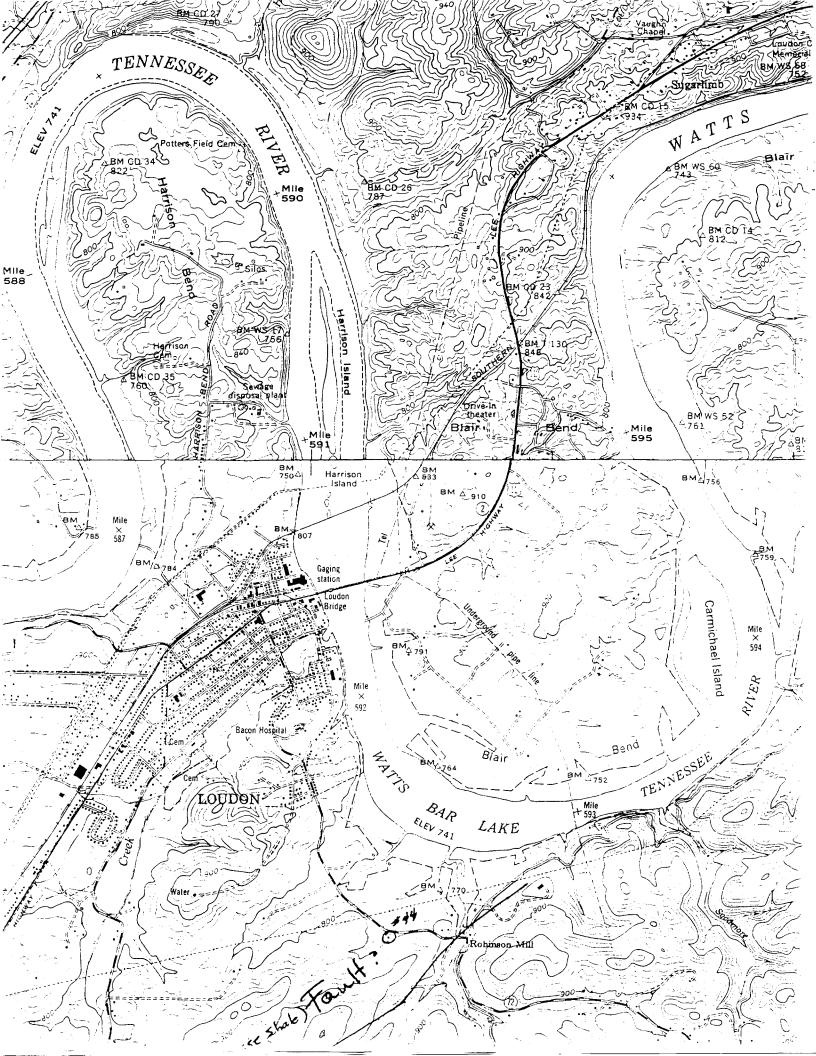
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# POTENTIAL HAZARDOUS WASTE SITE

I. IDENTIFICATION

<b>ŞEPA</b>	SITE INSPECTION REPORT PART 11 - ENFORCEMENT INFORMATION	OT STATE OZ SITE NUMBER
II. ENFORCEMENT INFORMATION		
01 PAST REGULATORY ENFORCEMENT ACTION TIMES	I NO	
02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATOR	ORY/ENFORCEMENT ACTION	
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<del>-</del>		
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III. SOURCES OF INFORMATION (Cite specific reference	ices, e.g., state Mes, sample analysis, regords)	



# Reference 3

C-586-2-0-222

March 1, 1990

Mr. A. R. Hanke Site Investigation and Support Branch Waste Management Division Environmental Protection Agency 345 Courtland Street, N. E. Atlanta, Georgia 30365 Date:\_\_\_\_\_\_Site Disposition: EPA Project Manager:

Subject:

Screening Site Inspection, Phase I

Metal Resources, Inc.

Loudon, Loudon County, Georgia

EPA ID No. TND991279746 TDD No. F4-9001-171

Dear Mr. Hanke:

FIT 4 conducted a Phase I Screening Site Inspection of Metal Resources, Inc. in Loudon, Loudon County, Tennessee. This inspection included a review of state and EPA file material, a target survey, and an offsite reconnaissance of the property and surrounding areas.

Metal Resources, Inc. is located on Tennessee Highway 2 North in Loudon, Tennessee (Ref. 1). The facility began operations in 1981 and refines scrap aluminum (Ref. 2). The facility filed a RCRA part A application in 1981 and withdrew it in 1982 (Ref. 2).

Metal Resources, Inc. is located in the Valley and Ridge Physiographic Province north of Loudon, Loudon County, Tennessee (Ref. 3 p. 5). In this region the topography is shaped by broad thrust-fault hills trending northeast-southwest (Ref. 1). These direct surface water into a general northeast-southwest orientation. The Tennessee River bisects this target area from east to west, but \_\_\_\_\_\_\_ northward, or southward in response to differenticlly eroded thrust-related ridges (Ref. 1). The

climate is mild, and it has an annual rainfall of 12 inches with a 1-year, 24-hour rainfall of 3.0 inches (Ref. 4, p. 5; 5 p. 43, 63; 6 p. 93).

In this region groundwater is obtained from a regolith and fractured bedrock aquifer system. Beneath the study area the bedrock consists of dolomite Cambrian and Ordovician forms twins (Ref. 3, pp. 36-41). These types of aquifers commonly are not productive greater than 350 feet below land surface. Production is dependent on the presence of fractures, and it is estimated that wells can achieve 100 gallons per minute (Ref. pp. 40, 41). The aquifer beneath the facility is made up of fractured and solution dissolved portions of the dolomitic Newala Formation and its overlying sedimentary regolith. The residual clay sediments of the Newala Formation represent the layer of lowest hydraulic conductivity between the combrian aquifer and the surface. Sediments of this kind have been shown to have a hydraulic conductivity in the 1x10-7 to 1x10-9 cm/second (Ref. , p. 29). Groundwater would be expected to be present at a depth of 80 to 85 feet below land surface. (Ref. ).

Four municipal water systems (Loudon City utilities, Piney Utility District, the Dixie Lee Utility Water System and the LeNoir City Water System) are the primary suppliers of water to areas within 4 miles of the site. The Loudon City Utilities obtain its water from a surface intake on Watts Bar Lake, which is formed by the Tennessee river (Ref. 1). The intake is approximately 4,600 feet upstream from the Metal Resources facility (Ref. 1). A small spring, 3.5 miles southwest of the dump, is also used as a municipal water source; however, the Tennessee River acts as a barrier to surface, or groundwater migration (Ref. 1). The area of coverage includes the town of Loudon, an area to the west of the city south of the Tennessee River, and an area to the east of Loudon, north of the River. The system serves 2,500 connections or 9,500 persons (Refs. 1,).

The Piney Utility District obtains its water from a spring 2 miles south of the site. the spring is located on Clear Branch Road near Robinson Mill Road. Piney Utility also can purchase water from the Loudon City Utilities as a back up. the Tennessee River would act as a barrier to surface, or

groundwater migration from the facility site. this water system supplies water to 820 connections and has an area of coverage southeast of the city of Loudon (Refs.1, ).

The Dixie Lee Utility System supplies municipal water to a small area north of the city of Loudon and has three different sources of water, from a spring four miles north of the facility, a surface water intakes on Ft. Loudon Lake and from LeNoir City Utility, which also obtains water from Ft. Loudon Lake. However, none of these water sources would be influenced by conditions due to distance from the study area (Refs. 1,)

The LeNoir City Utility System supplies municipal water to the northeastern portion of the study area.

The LeNoir City Utility receives water from intakes on Ft. Loudon Lake intakes are upstream and beyond the 4-mile radius of the study area (Ref).

A map showing the extent of the municipal water distribution lines within the 4-mile radius is enclosed (Ref. 1). A house count taken from the approprints topographic maps indicates that \_\_\_\_\_ homes or \_\_\_\_ persons are not served by the municipal systems in a 3-mile radius from the site. If a 4-mile radius is considered, there are \_\_\_\_ additional homes or \_\_\_\_ additional persons using groundwater. The closest private well to the site would be \_\_\_\_ feet to the \_\_\_\_ (Ref. 1).

The Metal Resources, Inc. facility is located on the side of a hill. Surface water would drain to the north.

Site conditions would not influence any surface water intakes used for municipal water supplies. The closest downstream surface water intakes are at Kingston and Rockwood. Both of these are more than 15 stream miles in distance form the site. The Tennessee River is used recreationally for fishing, swimming and boating (Refs.).

Land use within the 4-mile radius of the facility would include single-family residential housing,			
which is adjacent to the property and commercial/industrial/institutional use in the of Loudon and			
LeNoir City. Outside the two city limits, land is rural in nature (Ref. 1)., with the closest residence			
being within feet (Ref. ). The population with 1 mile is estimated to be persons and within 4			
miles is persons (Ref. ). the number of workers at the facility is not known.			
Endangered species and sensitive habitats are listed as being in Loudon County. The slackwater			
dorter (Etheostoma boschungi) and the snall darter (Percuna tanasi) are classified as threatened in			
Loudon County. In addition, the white warty-back psarly mussel (Plethobascus cicatricocus) is listed			
as endangered in the Tennessee River (Ref. ).			
Based on the results of this evaluation and the attached reference material, FIT 4 recommends that no			
further remedial action be planned for the Metal Resources, Inc., facility. Please contact me at NUS			
Corporation if you have and questions about this site.			
Very truly yours, Approved:			
Clifford Leonard, Jr. Project Manager			
CL/ma			
Enclosures			
CC: Kelly Cain			

.



# BLACK & VEATCH Waste Science, Inc. Project 52012.523

Logbook for Documentation of Site Visit February 5 - 7, 1995

Metal Resources, Inc. Loudon, Loudon County, Tennessee EPA ID No. TND991279746

Recorded by:

Jon Erskine, Site Geologist

MST Elec + WATH DEPT 968-5213

57 MONTOR

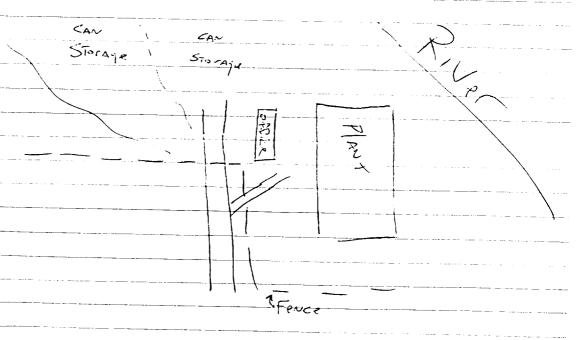
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1400 Acrive DE SITE. SITE is no longer on Hydray 11 Ar before Site is Now South of LOWN AT the end of Cecil B Webb drive in An industrial park by the Tennessee River, S.T. is Active and divided into two PATTS, RACH Surrounded by A BATO wire force. One half of the site houses A processing plant and offices, while the streag half is for storing Aliminum scrap (recycled CANS). Scrap Alum. is pressed into Parge rectangles. IT is hard to see the site from the road duy to will and VOSATATION . "Surface water run-off. Appears to the Straight To GVETT No Special drainage controls Are Noticables There Are Probably be workers moite (max).

Size Scrich from road



Bradley Denton, Water Department Manager, showed me water line maps for LCUD. He Nelped me transfer the water line info onto USGS maps. He showed me the correct surface water intake location, and delineated service areas by Street. He said that LCUD provides water to 2,700 people entirely from One surface water intake. No groundwater is utilized.

Phone (615) 986-6591

10:00

Dixi Le OTILITIES 2/7/95

11:30

Bill Cusick Dixie Lee WATER Comissioner, showed may water service Areas for Dixie Lee Utilities on USGS maps. He located the Dixie Lee Spring and said that Dixie Lee pumps approx 600,000 gallous a day from the Spring, and purchases 200,000 gallous 4 day from the Louden County Util Dist, and and additional 300,000 gallous a day from the First Util Dist. Dixie Lee provides Service to 3,000 hook-ups. The source of First Util Dist water is not located within the 15 mile

Phone: (615) 986 - 2025

13:00

201 Alma Pl., Louden, TN

John Davis reported that LCWS serves approx Z,300 Connections. Mr. Davis delineated service Areas on a USGS topo map. He identified surface LCWS' surface water intake and spring. Approx 90% of their water comes from the surface water intake, and lo's from the spring.

Phone: (615) 458-2091

Mr Davis believes there the spring draws water from the surficial Aguster (regulat?)

	Pinay OT,/ Dist.	- <del>-</del>
14:00	BE Presley, MANAger, delineated Service	
	the spring where all of Pinex's water is drawn from. Pinex provides water to 1,130 connections.	··
	Phone (615) 458-4411	
	Spring located 134 wills south of Site	

## OVERSIZED DOCUMENT

Reference 6

1990 Census of Population and Housing Summary Population and Housing Characteristics

**Tennessee** 

Issued August 1991



U.S. Department of Commerce Robert A. Mosbacher, Secretary Rockwell A. Schnabel, Deputy Secretary

Economics and Statistics Administration Michael R. Darby, Under Secretary for Economic Affairs and Administrator

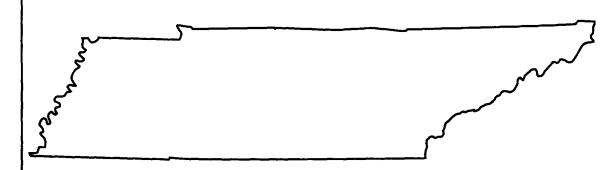
> BUREAU OF THE CENSUS Barbara Everitt Bryant, Director

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### Water Resources Data Tennessee Water Year 1993

by D.F. Flohr, F.D. Edwards, J.G. Lewis, and R.A. Orr

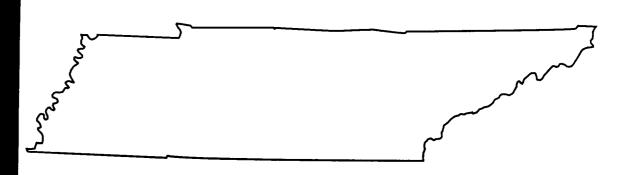


U.S. GEOLOGICAL SURVEY WATER-DATA REPORT TN-93-1 Prepared in cooperation with the State of Tennessee and with other agencies





### Water Resources Data Tennessee Water Year 1993



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT TN-93-1 Prepared in cooperation with the State of Tennessee and with other agencies

#### RESERVOIRS IN TENNESSEE RIVER BASIN--Continued

03535900 MELTON HILL LAKE.--Lat 35°53'04", long 84°18'01", Loudon-Roane County line, Hydrologic Unit 06010207, 9 mi southwest of Oak Ridge, 19 mi west of Knoxville, 57 mi downstream from Norris Dam on Clinch River, and at mile 23.1 DRAINAGE AREA, 3,343 mi<sup>2</sup>. PERIOD OF RECORD, August 1962 to current year. GAGE, water-stage recorder. Datum of gago sea level.

REMARKS.--Reservoir is formed by concrete gravity dam. Spillway is equipped with three radial gates, each 42 high by 40 ft wide. Dam completed and storage began May 1, 1963; water in reservoir first reached minimum pool elevation May 23, 1963. Revised capacity table put into use Jan. 1, 1971. Total capacity at elevation 796 ft, top gates, is 63,500 cfs-days, of which 16,100 cfs-days is controlled storage above elevation 790.0 ft, normal minimum preservoir is used for navigation, power, and recreation.

COOPERATION. -- Records furnished by Tennessee Valley Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 64,900 cfs-days, Mar. 16, 1973, elevation, 796.45 ft; minimum after first filling, 35,100 cfs-days, Feb. 9, 1966, elevation, 784.10 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 61,100 cfs-days, Mar. 29, elevation, 795.20 ft; minimum, 47,200 cfs-days, Feb. 4, elevation, 789.89 ft.

03543000 WATTS BAR LAKE.--Lat 35°37′l3", long 84°47′00", Rhea County, Hydrologic Unit 06010201, at Watts Bar Dam on Tennessee River, 6.5 mi southeast of Spring City, 72.4 mi downstream from Fort Loudoun Dam, and at mile 529.9. DRAIN AREA, 17,310 mi², approximately. PERIOD OF RECORD, October 1941 to current year. GAGE, water-stage recorder. Datugage is sea level.

REMARKS.--Reservoir is formed by concrete dam with riprapped earth embankments. Spillway equipped with 20 radi gates, each 32 ft high by 40 ft wide, also one 2-section leaf trashway gate 16.3 ft high by 24 ft wide. Storage beg with partial closure Dec. 12, 1941, and final closure Jan. 1, 1942; water in reservoir first reached minimum navigat pool elevation Feb. 17, 1942. Revised capacity table put into use Jan. 1, 1971. Total level pool capacity at eleva 745.0 ft, top of gates, is 592,400 cfs-days, of which 191,000 cfs-days is controlled flood storage above elevation 7 ft, minimum navigation pool. Reservoir is used for navigation, flood control, and power.

COOPERATION. -- Records furnished by Tennessee Valley Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 745.40 ft, Mar. 17, 1973; minimum after first filling, 733.4 ft, Mar. 20, 1945.

EXTREMES FOR CURRENT YEAR, -- Maximum midnight contents, 518,500 cfs-days, Nov. 5; maximum elevation, 741.47 ft, Nov. 5; minimum midnight contents, 411,300 cfs-days, Feb. 11; minimum elevation, 735.26 ft, Feb. 11. Contents bas on backwater profile.

03564000 LAKE OCOEE.--Lat 35°05'40", long 84°38'53", Polk County, Hydrologic Unit 06020003, at Lake Ocoee Dam on Ocoee Ri at Parksville, 13.8 mi east of Cleveland, and at mile 11.9. DRAINAGE AREA, 595 mi<sup>2</sup>. PERIOD OF RECORD, June 1914 to current year. Prior to October 1953, published as "Parksville (Ocoee No. 1) Reservoir," and October 1953 to Septembe 1968, as "Parksville Lake." GAGE, nonrecording gage. Datum of gage is 6.89 ft above sea level. Gage readings have been reduced to sea level.

REMARKS.--Reservoir is formed by concrete dam with 347 ft of spillway. Spillway is equipped with four floodgate each 6 ft high by 20 ft wide and 265 ft of flashboards about 5.7 ft high. Crest of spillway under gates is at elevat 830.82 ft; remainder of spillway is 1.0 ft higher. Dam completed and storage began in 1911. Capacity of reservoir h been considerably reduced by silting. Revised capacity table put into use Jan. 1, 1979. Total capacity at elevation 837.55 ft, about top of flashboards, is 42,300 cfs-days, of which 15,600 cfs-days is controlled storage above elevati 817.9 ft, normal minimum pool. Reservoir is used for power.

COOPERATION. -- Records furnished by Tennessee Valley Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum midnight contents observed, 53,300 cfs-days, July 9, 1916; maximum midnight elevation observed, 840.2 ft, Feb. 10, 1946; minimum contents observed, 27,300 cfs-days, Jan. 27, 1956, elevation, 817.7 ft; minimum midnight elevation observed, 814.8 ft, Dec. 14, 1934.

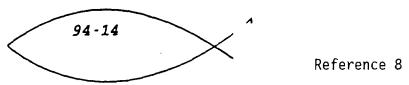
EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 41,000 cfs-days, May 6, elevation, 836.6 ft; minimum 32,3 cfs-days, Jan. 18, elevation, 826.7 ft.

#### MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

		Elevation	Contonto	Change in	Elevation	Contonto	Change in	Elevetica	Comtomto	Change in
				contents			contents	Elevation		contents
ı	Date	(feet)	(crs-days)	(cfs-days)	(feet)	(crs-days)	(cfs-days)	(feet)	(cfs-days)	(cfs-days)
		03535	900 MELTON	HILL LAKE	*035430	000 WATTS	BAR LAKE	03564	000 LAKE 0	COEE
Sept.	30	794.10	57,900	-	740.45	498,400	-	834.3	38,700	-
Oct.	31	793.59	56,500	-1,400	739.99	490,800		834.7	39,100	+400
Nov.	30	793.51	56,300	•	736.83	434,100	•	831.2	35,900	
	31	793.50	56,200		737.41	446,800		832.2	36,800	
CAL	YR 1992	? -	-	-400	-	-	+32,500	-	-	+4,200
Jan.	31	793.87	57,300	+1,100	736.87	434,800	-12,000	827.3	32,700	-4,100
Feb.	28	793.95	57,500	+200	736.98	435,000	+200	828.4	33,600	+900
Mar.	31	793.75	56,900	-600	736.61	431,600	-3,400	832.5	37,100	+3,500
Apr.	30	794.14	58,000	+1,100	740.69	503,100	•	835.9	40,300	•
May	31	794.42	58,800	+800	740.81	505,500	•	834.5	38,900	
June	30	793.84	57,200	-1,600	740.61	501,600	•	835.1	39,500	•
July	31	793.52	56,300	-900	740.27	•	•	834.8	39,200	
Aug.	31	793.63	56,600		740.22	494,000	•	835.3	39,700	
	30	793.73	57,200		740.04	•	•	834.7	39,100	
WTR	YR 1993	-	-	-700	-	-	-7,700	-	-	+400

<sup>\*</sup> Contents based on backwater profile.

## FISHERIES REPORT



## COMMERCIAL FISHING REPORT 1993



By Robert M. Todd



ESTIMATED 1993 HARVEST OF ALL FISH SPECIES COMBINED BY QUARTER REPORTED IN POUNDS

BODY OF WATER	JANUARY - MARCH	APRIL - JUNE	JULY - SEPTEMBER	OCTOBER - DECEMBER	ANNUAL HARVEST
BARKLEY	3,949	160,098	272,490	201,663	638,200
CHEATHAM	0	30,234	1,062	3,649	34,945
CHEROKEE	1,364	2,856	23,566	0	27,786
CHICKAMAUGA	0	202,652	120,897	79,265	402,814
DAVY CROCKET	0	0	0	0	0
DOUGLAS	219,434	154,647	89,581	147,876	611,538
FORT LOUDOUN	0	18,118	15,392	27,077	60,587
GUNTERSVILLE	21,703	0	0	3,857	25,560
JOHN SEVIER	0	0	0	0	0
KENTUCKY	213,059	474,114	501,861	766,916	1,955,950
NICKAJACK	20,883	63,789	0	65,571	150,243
OLD HICKORY	2,234	48,778	32,002	38,298	121,312
PICKWICK	13,789	63,003	85,249	54,087	216,128
REELFOOT	6,523	366	22,063	2,298	31,250
WATTS BAR	0	20,828	34,6 <b>7</b> 7 531	0	55,505 5,365
CHISHOLM	358	2,471	231	2,005 0	5,365 0
CRUTCHER	0	0	0	0	0
BRUTENS BR. NORTH LAKE	0 0	0	0	0	0
OPEN LAKE	616	0	0	0	616
BEECH RIVER	010	0	0	0	010
CLINCH RIVER	0	0	26,184	0	26,184
CUMBERLAND	18,767	10,669	22,389	45,649	97,474
DUCK RIVER	10,707	1,500	1,657	0	3,157
EMORY RIVER	0	1,500	0	0	0
FORKED DEER	1,638	ő	ő	ő	1,638
FRENCH BROAD	0	0	0	0	0
HARPETH	0	0	0	0	0
HATCHIE	11,859	11,786	946	12,508	37,099
HIWASSEE	0	0	67	0	67
HOLSTON	0	0	0	0	0
LOOSAHATCHIE	998	0	0	0	998
MISSISSIPPI	29,797	20,816	105,075	37,832	193,520
NOLICHUCKY	0	2,013	2,478	0	4,491
OBION RIVER	7,730	3,642	2,646	4,006	18,024
OLD RIVER	0	183	0	0	183
RED RIVER	0	212	0	0	212
SEQUATCHIE	0	0	0	0	. 0
WOLF RIVER	0	0	0	0	0
COLD CREEK	709	1,281	0	0	1,990
DEER CREEK	0	Ø	0	0	0
MORGAN CREEK	0	0	0	0 0	0 0
NIXON CREEK POND CREEK	0 0	0 0	0	0	0
WEST FORK CK	0	0	0	0	0
ALL WATERS	575,410	1,294,056	1,360,813	1,492,557	4,722,836

## OVERSIZED DOCUMENT



# REPORT OF SURVEY FOR: THREATENED AND ENDANGERED SPECIES WETLANDS STREAM IDENTIFICATION AT A PROPOSED SOLID WASTE LANDFILL SITE BLAIR BEND INDUSTRIAL PARK, LOUDON COUNTY, TENNESSEE

Prepared for:
Metal Resources, Inc.
Blair Bend Industrial Park
Loudon, Tennessee 37777

Prepared by:
ERCE
725 Pellissippi Parkway
P.O. Box 22879
Knoxville, Tennessee 37933-0879

ERCE # 03540903

December 1991

#### INTRODUCTION

Metal Resources, Inc. is seeking a permit for the construction of a solid waste landfill on a tract of property located in the Blair Bend Industrial Park, Loudon, Loudon County, Tennessee. This report addresses three specific regulatory compliance issues associated with regulations promulgated by the Tennessee Department of Environment and Conservation (TDEC), Division of Solid Waste Management. These three issues and applicable regulations are discussed in the following paragraphs.

#### Endangered Species

Rule 1200-1-7-.04(2)(m) requires that:

Facilities shall be located, designed, constructed, operated, maintained, closed, and cared for during the post-closure care period in a manner that does not:

- Cause or contribute to the taking of any endangered or threatened species of plants, fish, or wildlife; or
- 2. Result in the destruction or adverse modification of the critical habitat of endangered or threatened species.

Rule 1200-1-7-.01(2) defines an endangered or threatened species as "any species listed in 50 *Code of Federal Regulations* (CFR) Part 17, as such list exists on the effective date of this Rule".

#### Wetlands

Rule 1200-1-7.04(2)(p) states: "Facilities must not be located in a wetland".



#### Streams

Rule 1200-1-8.04(3)(a), Buffer Zone Standards for Siting New Landfills, states:

[fill areas are at a minimum]...:

1. 200 feet from the normal boundaries of springs, streams, lakes, and other bodies of water (except that this standard shall not apply to any wet weather conveyance nor to bodies of water constructed and designed to be a part of the facility).

#### DESCRIPTION OF THE SURVEY AREA

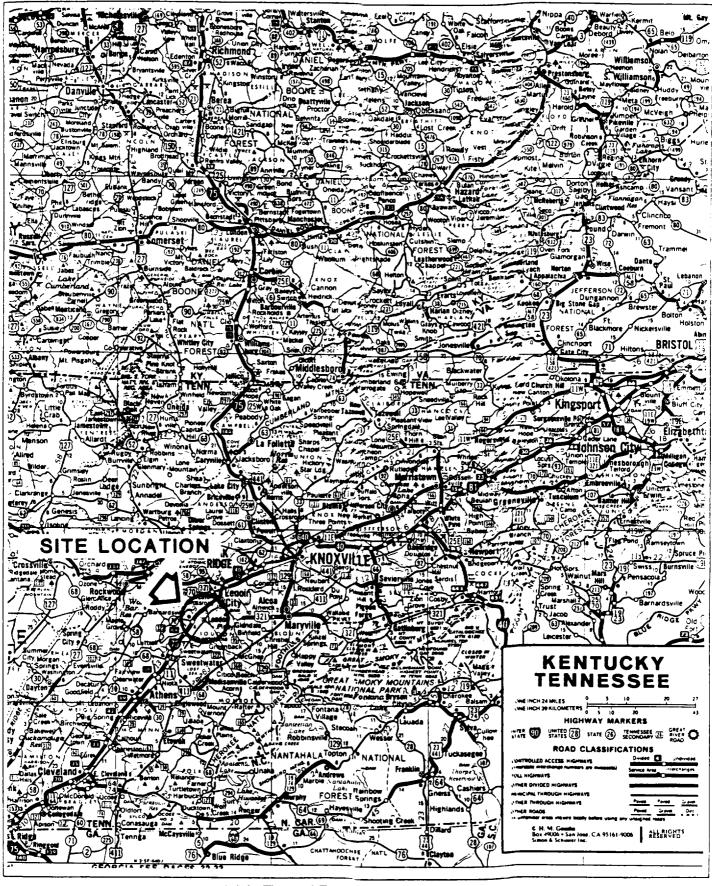
The subject tract is located near Loudon, in the central portion of Loudon County, Tennessee. Figure 1-1 is a depiction of the regional location, and Figure 1-2 depicts the site location within Loudon County.

As shown in Figure 1-3, topography on the subject tract ranges from approximately 750 feet above sea level to 900 feet above sea level; vegetation complexes present include oak-hickory forest, open fields from agricultural abandonment, second-growth cedar/hardwood forests, and vegetation associated with an abandoned home site.

#### ENDANGERED SPECIES KNOWN FROM THE AREA

The Tennessee Wildlife Resources Agency (TWRA) is the regulating agency for endangered and threatened species of wildlife in Tennessee, with the division of Ecological Services of the





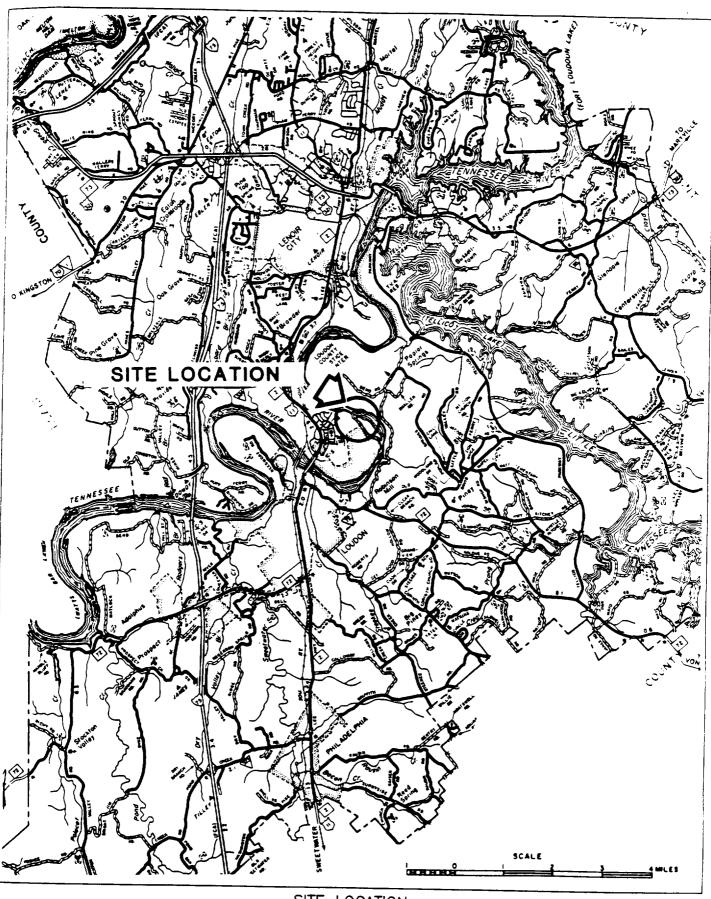


LOCATION OF LOUDON, TENNESSEE

METAL RESOURCES INC
PROJECT #13540903

4 5/91 SCALE: 1" = 24 MILES Figure 1-1







SITE LOCATION

METAL RESOURCES INC
LOUDON, TENNESSEE
PROJECT #13540903

4/5/91

Figure 1-2



Tennessee Department of Conservation being the corresponding agency for plant species. Both of the agencies maintain lists of species listed as endangered or threatened by the Federal government. Consultations with these two agencies indicated that occurrences of listed species are tracked by county and, within counties, by the United States Geological Survey (USGS) 7.5' quadrangle maps.

The proposed location of the landfill is on the Loudon, TN, quadrangle. Accordingly, the Federal list of endangered and threatened species known to occur on that quadrangle were obtained. The list is given in Table 1. Of the two species listed, one is a mussel and the other is a fish species; both are known from the Tennessee River, which is located adjacent to the subject property.

#### Wetlands

Copies of the National Wetlands Inventory Map for the Loudon, TN, quadrangle were obtained from the United States Department of Agriculture, Soil Conservation Service (SCS). The map showed no previously identified wetlands present on the subject property.

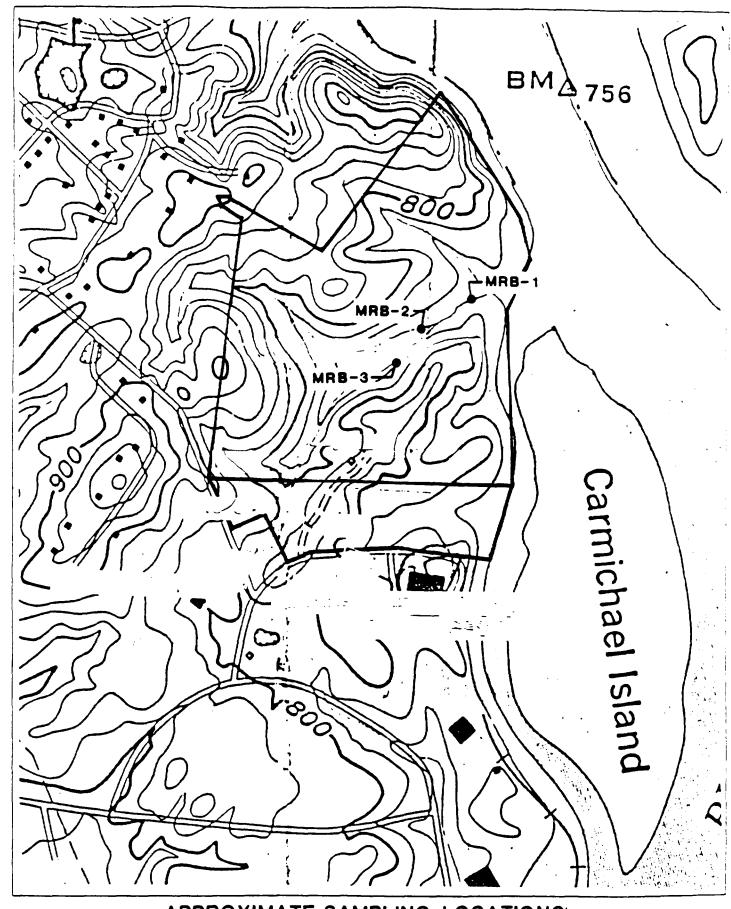
#### Streams

The USGS quadrangle for Loudon, TN, shows three "blue-line" streams present on the subject property (see Figure 1-3). As shown on that map, these streams drain the three major hollows present, merge, and exit the property at the eastern boundary, flowing directly into the Tennessee River.



Table 1. Federally Listed Endangered And Threatened Species Known To Occur On The Loudon, TN, Quadrangle.

Scientific Name	Common Name	Federal Status	State Status	
<u>Percina tanasi</u>	Snail Darter	LT	Т	
Lampsilis abrupta	Pink Mucket Mussel	LE	E	



APPROXIMATE SAMPLING LOCATIONS

**♦ ERCE** 

METAL RESOURCES INC LOUDON, TENNESSEE PROJECT #13540903 4/5/91 Figure 1-3



#### SURVEY RESULTS AND DISCUSSION

ERCE personnel visited the subject site on 7 July 1991. Although the only endangered and threatened species known to occur on the quadrangle were aquatic species, a systematic survey of the site was made to search for previously unknown occurrences of terrestrial species. In addition, earlier surveys of the tract conducted in April and May of 1991 were made to determine the presence of potential jurisdictional wetlands and "blue-line" streams. The results of these surveys were as follows:

No threatened or endangered species were observed. Of the two state listed plant species known from the Loudon quadrangle, <u>Aster ericoides</u> (White Heath Aster) and <u>Isoetes macrospora</u> (Lake Quillwort) neither individuals nor appropriate habitat was observed.

No potential jurisdictional wetlands were discovered. While portions of the proposed landfill site are situated in drainageways, no obligate hydrophytic plants were observed and few facultative hydrophytes were seen. Only one small body of standing water is present on the site. This approximately 20 feet by 20 feet area appears to be the result of previous construction activities on the southeastern boundary of the site. Appendix I contains the U.S. Army Corps of Engineers determination that no wetland hydrologic characteristics were observed on site.

Only one small reach of stream within the subject property was determined to be perennial in nature. This reach occurs below the confluence of the two major drainageways on the site. An investigation of the macroinvertebrate communities of the drainageways was conducted to assist in this conclusion. The results of this investigation are included as Appendix II. Figure 1-3 shows the locations of the benthic sampling sites. The reach of stream determined to be perennial lies approximately 1,200 feet from the closest proposed construction activities associated with the landfill. Personnel from the Tennessee Department of



Environment and Conservation (TDEC), Division of Solid Waste Management, visited the proposed site and determined that no jurisdictional waters of the state, other than the reach described above, were present.

As a result of all the surveys conducted, the development of the proposed landfill should not be affected by any of the regulatory constraints previously described.

May 24, 1991

Eastern Regulatory Field Office

SUBJECT: Wetlands Jurisdictional Determination at Tennessee River Mile 594.3R, Loudon County, Tennessee

Mr. Mike Morton Metal Resources, Inc. Post Office Box 386 Loudon, Tennessee 37774

Dear Mr. Morton:

This refers to the recent request made on your behalf by Mr. Carlos Naranjo, of ERCE, for a jurisdictional determination of wetlands on your commercial property at Blair Bend Industrial Park, Loudon County, Tennessee. A May 22, 1991, onsite inspection revealed that the flagged area to the left of the current Metal Resources building, approximately one acre in size, is an upland area which does not contain wetland hydrologic characteristics. Therefore, a Department of the Army Permit will not be required for any proposed fill placement on the tract. This determination is valid for a period of two years from the date of this letter.

If you have further questions or comments, please contact this office at the above address or telephone (615) 986-7296.

Sincerely,

Catherine B. Elliott Manager, Eastern Field Office Operations and Readiness Division

Enclosure

Copy Furnished:

√IIr. Carlos Maranjo
ERCE
725 Pellissippi Parkway
P.O. Box 22879
Knoxville, Tennessee 37933



## APPENDIX II STREAM CHARACTERIZATION



#### STREAM CHARACTERIZATION

A characterization of potential blue-line streams present on the subject property was conducted in April, May, and July 1991. The scope of work for this characterization included:

- O A visual examination of streams which are shown on the Loudon quadrangle as "blue-line streams" to determine the presence/absence of surface flow;
- o Sampling of the streams and stream sediments for the possible presence of benthic macroinvertebrates;
- o The identification of any benthic macroinvertebrates present in the samples;

Results of the benthic characterization of Samples MRB-1, MRB-2, and MRB-3 are given in Table I of this Appendix. In total, the three samples contained 14 species represented by 95 individuals. The three stations are discussed below.

Station MRB-1, located below the confluence of the two major drainageways approximately 100 yards upstream from it's entrance into the Tennessee River, contained the most species, 10, represented by 30 individuals. All species found in this sample are stream species and require well oxygenated flowing water to survive.

Station MRB-2 was located in the drainageway which enters from the northwestern portion of the subject site, approximately 100 feet upstream of the confluence of the two major drainageways. The location was within 10 yards of the point at which surface water was first present in this drainageway. The sample contained two species represented by seven individuals. <u>Gammarus</u> sp. is a species found in seep springs or small streams which remain cool



year round; the second species present (<u>Ironoquia</u> sp.) is found in small streams.

The third station, MRB-3, was located in the drainageway which drains from the southern most major hollow on the subject site. At the time of the sampling event, this drainageway displayed intermittent surface flow. The fauna found at this station consisted of four species represented by 58 individuals. Of the 58 individuals, however, 55 were of a single species. These species are considered semiaquatic and prefer damp or wet habitats rich in organic debris; the permanent presence of water is not a requirement for survival of these species.

#### CONCLUSIONS

Consistent with the scope of work for the stream classification previously discussed, ERCE formulates the following conclusions based on the field work and analyses presented.

Identification of benthic invertebrate species present in samples taken from streams on the subject site indicate:

- o The stream reach downstream of the confluence of the two major drainageways should be considered a perennial stream. This reach is approximately 100 yards in length before it's entrance into the Tennessee River.
- o The drainageway which enters from the northwestern hollow on the subject site should be considered an intermittent stream from the point at which it appears on the surface. This point is approximately 100 feet upstream of the confluence of the two major drainageways on the site.



- o The drainageway which proceeds northeastward from the vicinity of Webb Road should be considered an ephemeral stream.
- The small drain which slopes from the northeastern most hollow and empties below sample station # MRB-1 had no defined drainageway or streambed. No water was observed in this hollow during the course of all of the site visits. Therefore, no aquatic samples could be collected.



Table 1. Macroinvertebrates taken from standing water on the Blair Bend Industrial Park, Loudon County, Tennessee on April 3, 1991.

SPECIES	MRB-1	STATION MBR-2	MBR-3
ANNELIDA			
Oligochaeta			
Lumbricidae			1
ARTHROPODA			
Crustacea			
Gammaridae			
Gammarus sp.		2	
Insecta			
Ephemeroptera			
Baetidae			
Beetis sp.	1		
Plecoptera	_		•
Amphinemura sp.	2		
Trichoptera			
Limnephilidae		_	
Ironoquia sp.	1	5	
Diptera			
Chironomidee			
Cardiocladius obscurus	1		
Chaetocladius			
piger sp. gp.			55
Cricotopus			1
tremulus sp. gp.	4		1
Orthocladius sp.	2		
Parametriocnemus			
lundbecki	2		
Thienemanniella xena	1		
Tvetenia	14		
discoloripes sp. gp. Tipulidae	14		
Ormosia sp.	2		
Pseudolimnophila sp.	-		1
Lagadolimiobutia ab.			•
TOTAL NO. OF ORGANISMS	30	7	58
TOTAL NO. OF SPECIES	10	5	4

16-FEB-1995 13:13:33.15

METAL RESOURCES

LATITUDE 35:44:39 LONGITUDE 84:18:40 1983 POPULATION

KM	0.00400	.400810	.810-1.60	1.60-3.20	3.20-4.80	4.80-6.40	SECTOR TOTALS
S 1	0	0	0	0	2269	0	2269
S 2	0	ō	ō	ō	0	928	928
S 3	0	0	0	0	0	0	0
S 4	0	0	0	0	1026	0	1026
S 5	0	0	14	0	0	0	14
S 6	0	0	0	1303	1645	0	2948
S 7	0	0	0	951	0	0	951
S 8	0	0	0	0	61	0	61
RING TOTA		0	14	2254	5001	928	8197

press RETURN to continue

MENU: Geodata Handling Data List procedures

Ente**BBABBABABABABABABABABABABABABABABAB**ebzmeváln parentheses) (RESERVE)

or a command: HELP, HELP option, BACK, CLEAR, EXIT, TUTOR

GEMS> exit

Type YES to confirm the EXIT command; type NO to restart GEMS GEMS> yes

\$ logout

HTW logged out at 16-FEB-1995 13:13:33.15 Itemized resource charges, for this session, follow:

NODE: VAXTM1 ACCT: 9040 START TIME: 16-FEB-1995 13:12:43.74

FROJ: GEMS0001 USER: HTW

BILLING PERIOD:950201 UIC: [000710,000012]

WEEKDAY: THURSDAY

BAUD: TERMINAL PORT: VTA2789

DESCRIPTION OF CHARG	GE 	QUANTITY	EXPENDITURE	
ALL CHARGE LEVELS	(Seconds)	49	0.0000	
1	•	47	0.0000	
CPU TIME	(Seconds)	2	0.3322	
TOTAL FOR THIS	SESSION		\$ 0.3322	

FINISH TIME:

\*\* Note: This total reflects the charges for this process only, subprocesses created during this session are accounted for separately

CLR PAD

NO CARRIER



#### BLACK & VEATCH Waste Science, Inc.

400 Northridge Road, Suite 350, Atlanta, Georgia 30350, (404) 594-2500, Fax: (404) 587-2930

US EPA -- Region IV Site Inspection Prioritization Work Assignment No. 12

BVWS Project 52012.523 April 27, 1995

Mr. Narindar Kumar Chief, Site Assessment Section U.S. Environmental Protection Agency 345 Courtland Street, NE Atlanta, Georgia 30365

> Draft Site Inspection Prioritization Subject:

> > Metal Resources, Inc. Loudon, Loudon County, TN EPA ID No. TND991279746

Dear Mr. Kumar:

Enclosed please find one copy of the Draft Site Inspection Prioritization for Metal Resources, Inc. in Loudon, Loudon County, Tennessee. If you have any questions, please contact me at 404/643-2320.

Very truly yours,

BLACK & VEATCH Waste Science, Inc.

Victor Blix

Project Manager

fw **Enclosures**  PEDIO

Doug Thompson, EPA PO, w/o enclosures Deborah Davidson, EPA CO, w/o enclosures Earl Bozeman, EPA WAM, w/o enclosures

APR 281995

VVII - ...



#### BLACK & VEATCH Waste Science, Inc.

2300 Clayton Road, Suite 1280, Concord, California 94520-2100, (510) 246-8010, Fax: (510) 246-8082

U.S. Environmental Protection Agency Metal Resources, Inc. Work Assignment 12

Mr. Narindar Kumar, Chief Site Assessment Section U.S. Environmental Protection Agency 345 Courtland Street, NE Atlanta, Georgia 30365

BVWS Project 52012.523 April 10, 1995

9/25/95 NFRAGE L TDSF PECIFI APR 281995

VVT Louis

Subject: Site Inspection Prioritization

Metal Resources, Inc.

Loudon, Loudon County, Tennessee

EPA ID TND991279746 West 4142

Dear Mr. Kumar:

BLACK & VEATCH Waste Science, Inc. (Black & Veatch) has been tasked by the U.S. Environmental Protection Agency (EPA) to conduct a Site Inspection Prioritization for the Metal Resources, Inc. (Metal Resources) site (the site) in Loudon, Loudon County, Tennessee. In accordance with the scope of work, a preliminary Hazard Ranking System (HRS) score was prepared to determine the need for future activities at the site.

The site is located on Highway 2 North in Loudon, Tennessee in the Blair Bend Industrial Park (Ref. 1, p. 6). From approximately 1981 to 1990, Metal Resources refined scrap aluminum at the site (Refs. 2, p. 1; 3). Prior to 1981, the site was undeveloped farm and forest land (Ref. 2, p. 1). Metal Resources filed a Resource Conservation Recovery Act (RCRA) Part A application for the site in 1981, but withdrew the permit in 1982 after determining that it did not generate hazardous materials (Ref. 1, p. 1). Metal Resources, Inc. ceased operations at the site in 1990 and moved its facilities to a new site located approximately 0.5 mile south of the original location (Ref. 4, p. 5). Based on observations made during an offsite reconnaissance conducted on February 5, 1995, by Black & Veatch personnel, the site is currently an unoccupied, vacant lot with no indications of past activities evident (Ref. 4, p. 6).

On November 30, 1983, an inspection by the Tennessee Department of Health and Environment, Division of Solid Waste Management (DSWM) concluded that no hazardous wastes were generated, treated, or stored at the site as the result of refining operations (Ref. 1, p. 1). A later visit to the site by DSWM on June 14, 1984, reported that due to the relatively recent start date of Metal Resources and the lack of a past history of development, this site does not fall under the RCRA program (Ref. 2, p. 1). Available file material does not indicate that environmental samples were collected during the inspections conducted at the site. File material does not indicate whether any uncontrolled spills occurred at the site.

Potable water within a 4-mile radius of the site is supplied by surface water along with municipal springs and private groundwater wells (Ref. 4, pp. 9, 11, 13, 15). Wells in the area are typically completed in the fractured regolith surficial aquifer (Refs. 3, p. 2; 4, p. 13). There are two municipal drinking water springs within 4 miles of the site: the Piney Utilities spring, which is located 1.75 miles south of the site and provides water to approximately 2,870 people, and the Loudon City Water System (LCWS) spring located 3.5 miles west of the site, which serves approximately 584 people (Refs. 4, pp. 11, 13; 5; 6). LCWS also obtains potable water from a surface water intake located on the Tennessee River (Ref. 4, p. 13). The nearest private well is located approximately 1.5 miles south of the site (Ref. 5). The estimated number of people using private wells and springs for drinking water was based on a house count from topographic maps of areas not serviced by municipal water systems (Refs. 5; 6). The estimated total population using drinking water derived from municipal springs and private wells within a 4-mile radius of the site is radially distributed as follows: 0 - 0.25 mile, 0 persons; 0.25 - 0.50 mile, 0 persons; 0.50 - 1 mile, 0 persons; 1 - 2 miles, 3,010 persons; 2 - 3 miles, 231 persons; 3 - 4 miles, 1,092 persons (Refs. 4, pp. 9, 11, 13, 15; 5; 6).

Surface water runoff from the site flows overland approximately 2,000 feet west before entering the Tennessee River at Watts Bar Lake (Tennessee River Mile Marker 592) (Ref. 5). Flow continues west along the Tennessee River for the remainder of the 15-mile surface water pathway (Ref. 5). The Loudon City Water System operates a surface water intake located on the opposite bank of the Tennessee River directly across from the probable point of entry (Refs. 4, p. 13; 5). This surface water intake provides

water to approximately 5,258 people (Refs. 4, p. 13; 6). No other surface water intakes are located along the surface water pathway. The flow rate of the Tennessee River at Watts Barr Lake varies between 300 and 1,000 cubic feet per second (Ref. 7). The Tennessee River at Watts Bar Lake is used for commercial fishing and has an annual yield of approximately 55,500 pounds (Ref. 8). The site is estimated to reside within the 500-year floodplain of the Tennessee River (Ref. 9). The habitats of the federally endangered pink mucket mussel (*Lampsilis abrupta*) and the federally threatened snail darter (*Percina tanasi*) have been identified along the 15-mile surface water pathway (Ref. 10, pp. 5, 6). No wetlands have been identified along the 15-mile surface water pathway (Refs. 5; 10, p. 5).

The estimated population within a 4-mile radius of the site is 8,197, and is radially distributed as follows: 0 - 0.25 mile, 58 persons; 0.25 - 0.50 mile, 135 persons; 0.50 - 1 mile, 1,067 persons; 1 - 2 miles, 2,254 persons; 2 - 3 miles, 5,001; 3 - 4 miles, 928 persons (Ref. 11). The nearest residence is located approximately 0.75 mile south of the site (Ref. 5). It is estimated that fewer than 100 persons were employed at the site during its operational years. The site is currently unfenced and easily accessible; however, public use of the site for recreational or other purposes is unlikely (Ref. 4, p. 6). No wetlands or endangered or threatened species have been identified within the 4-mile radius of the site (Ref. 5).

Due to the low number of pathway targets and low overall site score, no further action is recommended at the Metal Resources, Inc. site. Attached are all references used during this evaluation.

If you have any questions or comments, please contact me at (510) 246-8010 or Victor Blix at (404) 643-2320.

Sincerely,

BLACK & VEATCH Waste Science, Inc.

Jon Erskine Site Geologist

skr Enclosure

#### **REFERENCES**

- 1. State of Tennessee, Department of Public Health, Division of Solid Waste Management, Potential Hazardous Waste Site Preliminary Assessment Worksheet, Metal Resources, Inc., TND991279746, November 30, 1983.
- 2. Davis, Kenneth R., State of Tennessee, Department of Public Health, Division of Solid Waste Management, Office Correspondence, June 14, 1984. Subject: Metal Resources, Inc., TND991279746.
- 3. NUS Corporation, Draft Screening Site Inspection, Phase 1, Metal Resources, Inc., EPA ID No. TND991279746, March 1, 1990.
- 4. Erskine, Jon, BLACK & VEATCH Waste Science, Inc., Logbook for Documentation of Metal Resources, Inc. Site Visit, February 5-7, 1995.
- 5. U.S. Geological Survey, 7.5 minute series Topographic Quadrangle Maps of Tennessee: Cave Creek 1968 (Photorevised 1989); Philadelphia 1974; Lenoir City 1968 (Photorevised 1986); Loudon 1952 (Photorevised 1984); scale 1:24,000.
- 6. U.S. Department of Commerce, Bureau of the Census, <u>1990 Census of Population</u> and Housing Summary Population and Housing Characteristics, Tennessee, 1990 CPH-1-44, August 1991, p. 63.
- 7. U.S. Geological Survey, <u>Water Resources Data</u>, <u>Tennessee Water Year 1993</u>. Water-Data Report TN-93-1 (Nashville, Tennessee 1994).
- 8. Tennessee Wildlife Resources Agency, <u>Fisheries Report</u>, 94-14, 1993 Commercial Fishing Report, March 1994.
- 9. U.S. Department of Housing and Urban Development, Flood Insurance Rate Map: Town of Loudon, Tennessee, Loudon County.
- 10. ERCE, Report of Survey For: Threatened and Endangered Species, Wetlands, Stream Identification at a Proposed Solid Waste Landfill Site, Blair Bend Industrial Park, Loudon County, Tennessee, December 1991.

11. U.S. Environmental Protection Agency, <u>Graphical Exposure Modeling System</u> (GEMS) Data Base. Compiled from U.S. Bureau of the Census data, 1983.

# CONFIDENTIAL Hazard Ranking System Preliminary Score

METAL RESOURCES, INC. Loudon, Loudon County, Tennessee EPA ID TND991279746

The preliminary HRS score for the Metal Resources, Inc. site was calculated using the Site Inspection Worksheets. Pathways evaluated include groundwater migration, surface water migration, soil exposure, and air migration. Reportedly, no hazardous wastes were generated, treated, stored, or disposed at the site. Furthermore, file material does not indicate the presence of any hazardous substance at the site at any time. In addition, no environmental samples have been collected at the site. Therefore, due to the lack of data from the site, Maximum Waste Characteristics were used to evaluate each pathway. A Hazardous Waste Quantity (HWQ) factor value of 10 was assigned for all pathways based on the total area of the site (approximately 5 acres).

The groundwater migration pathway HRS score is based on an assumed observed release to the fractured regolith aquifer underlying the site. An observed release was assumed to evaluate worst case conditions at the site. Non-karst target values were used for scoring purposes. There are two municipal springs located within 4 miles of the facility; the Piney Utilities spring, which is located 1.75 miles south of the site and provides water to 2,870 people, and the Loudon City Water System spring, which is located 3.5 miles west of the site and provides water to an estimated 584 people. Potential private groundwater users were determined based on a house count of areas not serviced by municipal water. Approximately 4,333 people are estimated to obtain water from private wells and springs within the 4-mile radius. Low target values resulted in a low groundwater pathway score.

The surface water migration pathway HRS score was based on a potential release and low target values derived from downstream populations, sensitive environments, and recreational fishing areas. The location of the probable point of entry along the Tennessee River was assumed based on the area's topographic features. However, other probable points of entry are also likely due to drainage impediments such as roads and sewers within the city of Loudon. The City of Loudon Water System obtains its water solely from one surface water intake located on the opposite bank of the Tennessee River, directly across the assumed probable point of entry.

The soil exposure pathway was evaluated based on an assumed release to surficial soils. The pathway score was limited by the lack of a resident population and low nearby population target values.

The air migration pathway was scored based on potential to release. Approximately 8,197 people reside within 4 miles of the site. No wetlands or designated threatened or endangered species have been specifically identified within a 4-mile radius of the site.

Due to low target values and a low overall site score, no further action is recommended at the site. An observed release to surface water scenario was not scored due to the low likelihood of runoff reaching the Tennessee River. The site is surrounded by roads, gas stations, and large factories, which would alter the natural direction of runoff and decrease the probability of runoff reaching the river. An observed release to surface water would elevate the surface water pathway score and slightly increase the overall site score; however, the overall site score would still be below 28.5 (16.5). Due to the low sensitivity of the site score to an observed release to surface water, and the difficulty of directly attributing sample results to the site given its industrial setting, sampling is not recommended at the site.

#### HRS SCORING SUMMARY

 $S_{gw} = 14.29$   $S_{sw} = 0.69$   $S_{soil} = 0.003$  $S_{air} = 2.06$ 

OVERALL SCORE = 7.23

Site Name:	Metal Resources, Inc.	
Location:	Loudon, Loudon County, Tennessee	

### GROUND WATER MIGRATION PATHWAY SCORESHEET

Facto	r Categories and Factors	Maximum Value	Value Assigne	d
Liklil	nood of Release			
1.	Observed Release	550	550	
2.	Potential to Release			
	2a. Containment	10	10	
	2b. Net Precipitation	10	6	
	2c. Depth to Aquifer	5	3	
	2d. Travel Time	35	15	
	2e. Potential to Release			
	[lines $2a \times (2b + 2c + 2d)$ ]	500	240	
3.	Liklihood of Release (higher of lines 1 and 2e)	550		550
Wast	e Characteristics			
4.	Toxicity/Mobility	a	10,000	
5.	Hazardous Waste Quantity	a _	10	
6.	Waste Characteristics	100		18
7.	Nearest Well	50	5	
8.	Population	-		
	8a. Level I Concentrations	ь	0	
	8b. Level II Concentrations	b	0	
	8c. Potential Contamination	b	109.1	
	8d. Population (lines 8a + 8b + 8c)	. b	109.1	
9.	Resources	5	5	
10.	Wellhead Protection Area	20	0	
11.	Targets (lines $7 + 8d + 9 + 10$ )	ъ		119.1
Grou	und Water Migration Score for an Aquifer			
12.	Aquifer Score			
	[(lines $3 \times 6 \times 11)/82,500$ ]c	100		14.29
Gro	und Water Migration Pathway Score			
13.	Pathway Score (SGW), (highest value from line 12 for all aquifers evaluated)c	100		14.29

a Maximum value applies to waste characteristics category

b Maximum value not applicable

c Do not round to nearest integer

Site Name:	Metal Resources, Inc.				
Location	Loudon, Loudon County, Tennessee		*		

### SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT SCORESHEET

### **Drinking Water Threat**

Facto	or Categories and Factors	Maximum Value	Value Assign	ed
<u>Likli</u>	hood of Release			
1.	Observed Release	550	0	
2.	Potential to Release by Overland Flow	_		
	2a. Containment	10	10	
	2b. Runoff	25	11	
	2c. Distance to Surface Water	25	9	
	2d. Potential to Release by Overland Flow	<del></del>		
	[lines $2a \times (2b + 2c)$ ]	500	200	
3.	Potential to Release by Flood			
	3a. Containment (Flood)	10	10	
	3b. Flood Frequency	50	7	
	3c. Potential to Release by Flood	_		
	(lines 3a x 3b)	500	70	
4.	Potential to Release	_		
	(lines 2d + 3c, subject to a maximum of 500)	500	270	
5.	Liklihood of Release (higher of lines 1 and 4)	550		270
6.	Toxicity/Persistence	a _	10,000	
7.	Hazardous Waste Quantity	a	10	10
8.	Waste Characteristics	100		18
Targ	<u>ets</u>			
9	Nearest Intake	50	0	
10.	Population			
	10a. Level I Concentrations	b	0	
	10b. Level II Concentrations	b _	0	
	10c. Potential Contamination	b _	5.2	
	10d. Population (lines 10a + 10b + 10c)	b	5.2	
11.	Resources	5 _	5_	
12.	Targets (lines $9 + 10d + 11$ )	b	·	10.2
Drin	aking Water Threat Score			
13.	Drinking Water Threat Score			
	[(lines 5 x 8 x 12)/82,500], subject to a maximum of 100)	100		0.6

Site Name:	Metal Resources, Inc.		
		•	
Location:	Loudon, Loudon County, Tennessee		

## SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT SCORESHEET (CONTINUED)

### **Human Food Chain Threat**

Facto	r Categories and Factors	Maximum Value	Value Assigned
Liklih	good of Release		
14.	Liklihood of Release (same value as line 5)	550	270
Waste	e Characteristics		
15.	Toxicity/Persistence/Bioaccumulation	a	5E+08
16.	Hazardous Waste Quantity	a	10
17.	Waste Characteristics	1000	180
Targe	<u>ets</u>		
18.	Food Chain Individual	50	0
19.	Population		
	19a. Level I Concentrations	b	0
	19b. Level II Concentrations	b	0
	19c. Potential Contamination	b	0
	19d. Population (lines 10a + 10b + 10c)	b	0
20.	Targets (lines 18 + 19d)	b	0
Hum	an Food Chain Threat Score		
21.	Human Food Chain Threat Score [(lines 14 x 17	100	•
	x 20)/82,500], subject to a maximum of 100)	100	0

Site Name:	Metal Resources, Inc.	
Location	Loudon, Loudon County, Tennessee	

## SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT SCORESHEET (CONTINUED)

#### **Environmental Threat**

Facto	r Categories and Factors	Maximum Value	Value As	signed
Liklih	nood of Release			
22.	Liklihood of Release (same value as line 5)	550	_	270
Wast	e Characteristics			
23. 24. 25.	Ecosystem Toxicity/Persistence/Bioaccumulation Hazardous Waste Quantity Waste Characteristics	a a 1,000	5E+08	180
Targe		.,000	-	
<ul><li>26.</li><li>27.</li></ul>	Sensitive Environments  26a. Level I Concentrations  26b. Level II Concentrations  26c. Potential Contamination  26d. Sensitive Environments (lines 26a + 26b + 26c)  Targets (value from line 26d)	b b b b	0 0 0.15 0.15	0.15
Envi	ronmental Threat Score			
28.	Environmental Threat Score [(lines 22 x 25 x 27)/82,500, subject to a maximum score of 60)	60	-	0.09
Surfa	ace Water Overland/Flood Migration Component Score for a	Watershed		
<b>2</b> 9.	Watershed Scorec (lines 13 + 21 + 28, subject to a maximum score of 100)	100	-	0.69
Surf	ace Water Overland/Flood Component Score			
30.	Component Score (Ssw)c (highest score from line 29 for all watersheds evaluated, subject to a maximum score of 100)	100	-	0.69

a Maximum value applies to waste characteristics category

b Maximum value not applicable

c Do not round to nearest integer

Site I	Name Wetai Resources, inc.			
Loca	tion: Loudon, Loudon County, Tennessee			
	SOIL EXPO	OSURE PATHWAY SCORESHEET		
Resid	dent Population Threat			
Facto	or Categories and Factors	Maximum Value	Value As	signed
Liklil	hood of Release			
1.	Liklihood of Exposure	550	_	550
Wast	te Characteristics			
2.	Toxicity	a	10,000	
3.	Hazardous Waste Quantity	a	10	
4.	Waste Characteristics	100	_	18
Targ	ets			
5.	Resident Individual	50	0	
6.	Resident Population			
	6a. Level I Concentrations	b	0	
	6b. Level II Concentrations	b	0	
	6c. Resident Population (lines 6a + 6b)	b	0	
7.	Workers	15	0	
8.	Resources	5	0	
9.	Terrestrial Sensitive Environments	c	0	
10.	Targets (lines $5 + 6c + 7 + 8 + 9$ )	b		0

#### Resident Population Threat Score

11. Resident Population Threat
[(lines 1 x 4 x 10)/82,500] b 0

Site Name:	Metal Reources, Inc.	
Location:	Loudon, Loudon County, Tennessee	

### SOIL EXPOSURE PATHWAY SCORESHEET (continued)

#### **Nearby Population Threat**

Factor Categories and Factors		Maximum Value	Value Assigned	
<u>Liklil</u>	nood of Release			
12.	Attractiveness/Accessibility	100	10	
13.	Area of Contamination	100	20	
14.	Liklihood of Exposure	500		5
Wast	e Characteristics			
15.	Toxicity	a	10,000	
16.	Hazardous Waste Quantity	a	10	
17.	Waste Characteristics	100		18
Targe	<u>ets</u>			
18.	Nearby Individual	1	1	
19.	Population Within 1 Mile	b	1.3	
<b>2</b> 0.	Targets (lines 18 + 19)	b		2.3
Near	by Popuation Threat Score			
21.	Nearby Population Threat (lines 14 x 17 x 20)/(82,500)	b		0.003
Soil 1	Exposure Pathway Score			
22.	Soil Exposure Pathway Score (Ss), (lines 11 + 21,			
	subject to a maximum score of 100)	100	<del></del>	0.003

a Maximum value applies to waste characteristics category.

Maximum value not applicable.

c No specific maximum value applies to factor. However, pathway score based solely on sensitive environments is limited to maximum score of 60.

d Do not round to nearest integer.

Site Name:	Metal Resources, Inc			
Location:	Loudon, Loudon County, Tennessee			

#### AIR MIGRATION PATHWAY SCORESHEET

Facto	or Categories and Factors	Maximum Value	Value Assigned
<u>Likli</u>	hood of Release		
1.	Observed Release	550	0
2.	Potential to Release	_	
	2a. Gas Potential to Release	500	
	2b. Particulate Potential to Release	500	0
	2c. Potential to Release (higher of lines 2a and 2b)	<b>5</b> 00	0
3.	Liklihood of Release (higher of lines 1 and 2c)	550	500
Was	te Characteristics		
4.	Toxicity/Mobility	a _	10,000
5.	Hazardous Waste Quantity	a	10
6.	Waste Characteristics	100	18
Targ	<u>rets</u>		
7.	Nearest Individual	50	77_
8.	Population		
	8a. Level I Concentrations	b	0
	8b. Level II Concentrations	b	0
	8c. Potential Contamination	b	6.87
	8d. Population (lines 8a + 8b + 8c)	b	6.87
9.	Resources	5	5
10.	Sensitive Environments		
	10a. Actual Contamination	c _	0
	10b. Potential Contamination	c	0
	10c. Sensitive Environments (lines 10a + 10b)	c	. 0
11.	Targets (lines $7 + 8d + 9 + 10c$ )	b	18.87
Air	Migration Pathway Score		
12.	Pathway Score (SA)		
	[(lines $3 \times 6 \times 11)/82,500$ ]d	100	2.06

a Maximum value applies to waste characteristics category

b Maximum value not applicable

c No specific maximum value applies to factor. However, pathway score based solely on sensitive environments is limited to a maximum score of 60.

d Do not round to nearest integer

## CONFIDENTIAL

## SITE INSPECTION WORKSHEETS

CERCLIS IDENTIFICATION NUMBER

TND 991279746

		SITE L	OCATION				
SITE NAME: LE	GAL, COMMON, C	OR DESCRIPTIVE NAM	E OF SITE		····		
	Resources ?			· 			
(		SPECIFIC LOCATION					
	386 , Blai	r Bend Indes			***		
CITY			STATE	ZIP CODE	TELEPHONE		
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35° 441	ELATITUDE and L 39 11 84	* 18 40 "	TOWNSHIP, FA	NGE, AND SECTION	ON		
		OWNER/OPERATO	R IDENTIFICA	TION	<del></del>		
OWNER	<del></del>		OPERATOR				
SAML							
OWNER ADDRE	SS		OPERATOR ADDRESS				
CITY			CITY				
STATE	ZIP CODE	TELEPHONE ( )	STATE	ZIP CODE	TELEPHONE ( )		
		SITE EV	AL HATION	····			
AGENCY/ORGA	NIZATION	SITE EV	ALUATION	<del></del>	<del></del>		
USEPA	Region I	V					
INVESTIGATOR  Place +	Veatch (	DASTE Scien	Ce		-		
CONTACT  See F	. •						
ADDRESS 2360 Cl	Ayto- Rd S.	F. 1280					
Cancord	<del></del>		STATE	₹	74520		
TELEPHONE	-8010						

### GENERAL INFORMATION

peration ctive or ctivities alleged.	nal history. State the inactive status, and y that have or may hav	years of waste generalk we occurred at the site; pes and prior spills, floo	rator, type of facility on. Summarize was note whether these	cription of the site and its and operations, size of prop te treatment, storage, or disp activities are documented or trize highlights of the PA and
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## GENERAL INFORMATION (continued)

Gitte Sketch: Provide a ske invironments including sour access roads, parking areas invironments, and other fea	ton of the site. Indicate ces of wastes, areas of , fences, fields, drainage tures.	all pertinent features visible and buried wi e patterns, water bod	s of the site and neastes, buildings, realies, vegetation, we	arby idences, is, sensitive
See Report				-
		•		
				}
				-

#### **GENERAL INFORMATION (continued)**

Source Descriptions: Describe all sources at the site. Identify source type and relate to waste disposal operations. Provide source dimensions and the best available waste quantity information. Describe the condition of sources and all containment structures. Cite references.

#### SOURCE TYPES

Landfill: A man-made (by excavation or construction) or natural hole in the ground into which wastes have come to be disposed by backfilling, or by contemporaneous soil deposition with waste disposal.

Surface Impoundment: A natural topographic depression, man-made excavation, or diked area, primarily formed from earthen materials (lined or unlined) and designed to hold an accumulation of liquid wastes, wastes containing free liquids, or studges not backfilled or otherwise covered; depression may be wet with exposed liquid or dry if deposited liquid has evaporated, volatilized or leached; structures that may be described as lagoon, pond, seration pit, settling pond, tallings pond, studge pit; also a surface impoundment that has been covered with soil after the final deposition of waste materials (i.e., buried or backfilled).

Drum: A portable container designed to hold a standard 55-gallon volume of wastes.

Tank and Non-Drum Container: Any device, other than a drum, designed to contain an accumulation of waste that provides structural support and is constructed primarily of fabricated materials (such as wood, concrete, steel, or plastic); any portable or mobile device in which waste is stored or otherwise handled.

Contaminated Soil: An area or volume of soil onto which hazardous substances have been spilled, spread, disposed, or deposited.

Pile: Any non-containerized accumulation above the ground surface of solid, non-flowing wastes; includes open dumps. Some types of waste piles are:

Chemical Waste Pile:

A pile consisting primarily of discarded chemical products, by-products, radioactive wastes, or used or unused feedstocks.

• Scrap Metal or Junk Pile: A pile consisting primarily of scrap metal or discarded durable goods (such as appliances, automobiles, auto parts, batteries,

etc.) composed of materials containing hazardous substances.

Tailings Pile:
 A pile consisting primarily of any combination of overburden from

a mining operation and tailings from a mineral mining,

beneficiation, or processing operation.

• Trash Pile: A pile consisting primarity of paper, garbage, or discarded non-

durable goods containing hazardous substances.

Land Treatment: Landfarming or other method of waste management in which liquid wastes or sludges are spread over land and tilled, or liquids are injected at shallow depths into soils.

Other: Sources not in categories listed above.

For some sites, the manner in which the waste was deposited (e.g., creation of a waste pile) would be a primary defining characteristic and it would be appropriate to score the source type as a waste pile.

S-45 Issue: What are some definitions that can be used to assist in identifying and characterizing the source(s) at a site?

Preliminary Resolution: The following definitions are provided:

Active Fire Area: An area that is presently burning or smoldering and which, without remedial action, will continue to do so intently.

<u>Buried/Below-ground Containers or Tanks</u>: A container or tank the entire surface area of which is situated completely below the surface and which is not visible; however, a buried/below-ground tank may have a small fraction of its associated piping above the surface.

Buried/Backfilled Surface impoundment: A surface impoundment that has been completely covered with soil after final deposition of waste materials.

<u>Burn Pit:</u> An uncovered area on or on the land surface that was at one time used to burn waste materials or was otherwise significantly inflamed but is not presently burning.

Containers or Tanks: (1) Any stationary device designed to contain an accumulation of waste, which is constructed primarily of non-earthen materials (such as wood, concrete, steel, or plastic) which provides structural support. (2) Any portable device in which waste is stored or otherwise handled.

Contaminated Soil (excluding land treatment): (1) An area od soil that contains concentrations of a hazardous substance significantly above background. Evidence that the substance detected is related to the site must be provided to substantiate use of this descriptor. (2) An area on which available evidence demonstrates that hazardous substances were spilled. Note: somewhat similar to area of observed contamination but without the requirement that the hazardous substance be located within two feet of the surface.

Landfarm/Land treatment: Landfarming or land treatment is a method of waste management in which liquid waste or sludges are spread over land and tilled. It also applies to the shallow infection of liquids. The distinguishing characteristics of landfarms and land treatment facilities is the shallow injection or tilling of the soil.

Landfill: A landfill may be either a cleared area on the ground surface or a man-made or natural hole in the ground, containing wastes. The landfill may have been backfilled with the soil either after or contemporary with the wasted disposal, covering the wastes from view. The landfill may have been formed either by excavating the hole or by forming earthen walls around a cleared area. Due to weathering, erosion, and similar phenomena, however, once-

- These resolutions contain site-specific guidance that may or may not apply to other sites. -

September 1991

buried wastes in a landfill may become exposed, e.g., partially buried drums. The contents of a landfill may include nearly any or all types of wastes including buried drums.

#### Piles (by type):

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<u>Chemical Waste Pile</u>: A pile consisting primarily of discarded chemical products (whether marketable or not), by-products, or unused feedstocks.

Scrap Metal or Junk Pile: A pile consisting primarily of scrap metal or discarded durable goods such as appliances, automobiles or autoparts, and furniture.

<u>Tailings Pile</u>: A pile consisting primarily of any combination of overburden from a mining operation and tailings from a mineral mining, beneficiation, or processing operation.

<u>Trash Pile</u>: A pile consisting of primarily paper, garbage, or discarded non-durable goods such as food packaging (e.g., \*refuse\*).

Other: A term reserved for use when a pile of indeterminate origin has accumulated and is shown to contain certain hazardous substances, contaminants, pollutants, or radionuclides.

<u>Surface Impoundment</u>: A natural topographic depression, man-made excavation, bermed, or diked area, primarily formed from earthen materials (lined or unlined) which was designed to hold an accumulation od liquid wastes, wastes containing free liquids, or sludges that were not backfilled or otherwise covered. The distinguishing characteristics of a surface impoundment are the emphasis on liquid waste and the general lack of soil cover. Two types of surface impoundments are distinguished: those at which the deposited liquid has evaporated, volatilized, or leached (dry) and those with exposed liquid (other). Synonymous terms include lagoon pond, aeration pit, settling pond, and tailings pond:

S-46 . Issue: What are examples of 'other' source types?

Preliminary Resolution: Anything not specifically listed or that does not clearly fit into one of the listed source types, e.g., contaminated buildings, contaminated surface water sediments with no identified source, and contaminated equipment. Additional other source types may include: storm drains, dry wells, injection wells, ground water plumes with no identified source, radioactively contaminated equipment, etc. (See also Preliminary Resolution S-48.)

S-47 : ... Issue: Are seeps and leachate considered sources?

Pretiminary Resolution: Seeps and leachate are migration from sources, nor areas of deposition, and thus are not sources for the migration pathways. However, there is a

- These resolutions contain site-specific guidance that may or may not apply to other sites. --

September 1991

- : 1

good probability that the soils beneath seeps and leachate are contaminated. For the purposes of scoring the soil exposure pathway, therefore, seeps and leachate of hazardous substances can be considered observed contamination of the surface.

Seeps and leachate are also useful in attributing observed releases to sources. In some cases, seeps and leachate have been used to establish observed releases by direct observation to ground water and/or surface water.

S-48 Issue: Are buildings contaminated with radioactive materials considered sources? If so, what type?

Preliminary Resolution: Yes, they would be in the 'other' category of sources unless they fit a specific description (e.g., demoished building could be a pile).

S-49 Issue: Within a large source (e.g., landfill), what should be used as the starting point for measuring target distance limits?

Preliminary Resolution: For measuring target distances in pathways, use the source boundaries, which may be established in various ways (e.g., photographs, fill above grade). The exception would be ground water plumes and surface water sediments with no identified source.

- For such ground water plumes, use the center of the observed area of ground water contamination, as specified in Section 3.0.1.1 of the HRS rule.
- For such surface water sediments, if there is a clearly defined direction of flow, use the point of observed sediment contamination that is farthest upstream as specified in Section 4.1.1.2 of the HRS rule. If there is no clearly defined direction of flow, use the center of the area of observed sediment contamination as specified in Section 4.1.1.2 of the rule.

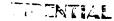
S-50 Issue: How is thickness of cover measured - maximum or minimum?

Preliminary Resolution: For purposes of scoring containment, thickness of cover is measured at the point of minimum thickness. In some cases, cracks may indicate a good place to measure the minimum thickness.

COMPLETE

## **GENERAL INFORMATION (continued)**

Source Description: include description of containment per	
Table 3-2), surface water (see HRS Table 4-2), and air (see HRS	
Source is considered as contaminated soil	, writal Resources
is no longer located At the Site. The	SITE IS A CUITENTLY
A- empty lot At the entrance to A.	- industrial park. No
TUN-OFF ENTINES ARE prosent.	
•	
Hazardous Waste Quantity (HWQ) Calculation: SI Tables	1 and 2 (See HRS Tables 2-5; 2-6.
and 5-2).	ZYAKT -
No samplinge data is available, a	1. of they 5.22 of
the site is uncertain. Therefore, a	Hazardors Waste
QUALTITY OF 10 is assigned in AC	cordance with
HRS section	
	-
Attach additional pages, if necessary	HWQ = 10



## SI TABLE 1: HAZARDOUS WASTE QUANTITY (HWQ) SCORES FOR SINGLE SOURCE SITES AND FORMULAS FOR MULTIPLE SOURCE SITES

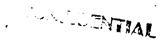
			le Source Sites ned HWQ scores)
(Column 1)	(Column 2)	(Column 3)	(Column 4)
TIER	Source Type	HWQ = 10	HWQ = 100
A Hazardous Constituent Quantity	N/A	HWO = 1 ii Hazardous Constituent Quantity data are complete HWO = 10 ii Hazardous Constituent Quantity data are not complete	>100 to 10,000 lbs
B Hezerdous Westestreem Quentity	NVA	≤ 500,000 fbs	>500,000 to 50 million lbs
	Landlill	≤ 6.75 million ft <sup>3</sup> ≤ 250,000 yd <sup>3</sup>	>6.75 million to 675 million ft <sup>3</sup> >250,000 to 25 million yd <sup>4</sup>
	Surface impoundment	≤6,750 ft <sup>3</sup> ≤250 yd <sup>3</sup>	>6,750 to 675,000 ft <sup>3</sup> >250 to 25,000 yd <sup>3</sup>
	Drums .	≤1,000 drums	>1,000 to 100,000 drums
C Volume	Tanks and non-drum containers	≤50,000 galions	>50,000 to 5 million gallons
	Contaminated soil	≲6.75 million ft <sup>3</sup> ≤250,000 yd <sup>3</sup>	>6.75 million to 675 million ft <sup>3</sup> >250,000 to 25 million yd <sup>3</sup>
	Pile	≤6,750 ft <sup>3</sup> ≤250 yd³	>6,750 to 675,000 ft <sup>3</sup> >250 to 25,000 yd <sup>3</sup>
	Other	≤6,750 ft³ ≤250 yd²	>6,750 to 675,000 ft <sup>3</sup> >250 to 25,000 yd <sup>3</sup>
	Landiili	≤340,000 ft <sup>2</sup> ≤7.8 acres	>340,000 to 34 million ft <sup>2</sup> >7.8 to 780 acres
D	Surface impoundment	≤1,300 ft <sup>2</sup> ≤0.029 acres	>1,300 to 130,000 tt <sup>2</sup> ->0.029 to 2.9 acres
Area	Contaminated soil	≤3.4 million ft <sup>2</sup> ≤78 acres	> 3.4 million to 340 million ft <sup>2</sup> > 78 to 7,800 acres
	Pile	≤1,300 ft <sup>2</sup> ≤0.029 acres	>1,300 to 130,000 ft <sup>2</sup> >0.029 to 2.9 acres
	Land treatment	≤27,000 ft <sup>2</sup> ≤0.62 acres	>27,000 to 2.7 million ft <sup>2</sup> >0.62 to 62 acres

1 ton = 2,000 pounds = 1 cubic yard = 4 drums = 200 gallons

TABLE 1 (CONTINUED)

Single Source (assigned HWQ		Multiple Source Sites		
(Column 5)	(Column 6)	(Column 7)	(Column 2)	(Column 1)
HWQ = 10,000	HWQ = 1,000,000	Divisors for Assigning Source WQ Values	Source Type	TIER
>10,000 to 1 million lbs	> 1 million tos	lbs + 1	N/A	A Hezerdous Constituent Quentity
>50 million to 5 billion lbs	> 5 billion fbs	lbs + 5,000	N/A	B Nezerdous Wastestream Quantity
>675 million to 67.5 billion ft <sup>3</sup> >25 million to 2.5 billion yd <sup>3</sup>	> 67.5 billion ft <sup>3</sup> > 2.5 billion yd <sup>3</sup>	$tt^3 + 67,500$ $yc^3 + 2,500$	Landfill	
·		}		
>675,000 to 67.5 million ft <sup>3</sup> >25,000 to 2.5 million yd <sup>3</sup>	> 67.5 million ft <sup>3</sup> > 2.5 million yd <sup>3</sup>	ft <sup>3</sup> + 67.5 yd <sup>3</sup> + 2.5	Surface Impoundment	
>100,000 to 10 million drums	> 10 million drums	drums + 10	,	
•	,		Drums	C
>5 million to 500 million gallons	> 500 million gallons	gallons + 500	Tanks and non-drum	Volume
AME THE LABOR ALIM 143	67.5 L75. 63		containers	
>675 million to 67,5 billion ft <sup>3</sup> >25 million to 2,5 billion ya <sup>3</sup>	> 67.5 billion ft <sup>3</sup> > 2.5 billion yd <sup>3</sup>	ft <sup>3</sup> + 67,500 yd <sup>3</sup> + 2,500	Contaminated Soil	
•				
>675,000 to 67.5 million ft <sup>3</sup> >25,000 to 2.5 million yd <sup>3</sup>	> 67.5 million ft <sup>3</sup> > 2.5 million yo <sup>3</sup>	$t^3 + 67.5$ $y t^3 + 2.5$	Pile	
>675,000 to 67.5 million ft <sup>3</sup>	> 67.5 million ft <sup>3</sup>	ft <sup>3</sup> + 67.5		-
>25,000 to 2.5 million yd <sup>3</sup>	> 2.5 million yo <sup>3</sup>	$yd^3 + 2.5$	Other	
>34 million to 3,4 billion tt <sup>2</sup> >780 to 78,000 acres	> 3.4 billion ft <sup>2</sup> >78.000 acres	ft <sup>2</sup> + 3,400 acres + 0,078	Landfill	
>/ du lu / p,uuu <b>a</b> ut <b>us</b>	>/0,000 acres		}	l
>130,000 to 13 million ft <sup>2</sup>	> 13 million ft <sup>2</sup>	ft <sup>2</sup> + 13	Surface	·
>2.9 to 290 acres	> 290 acres	acres + 0.00029	Impoundment	ם
> 340 million to 34 billion ft <sup>2</sup> > 7,800 to 780,000 acres	> 34 billion ft <sup>2</sup> > 780,000 acres	tt <sup>2</sup> + 34,000 acres + 0.78	Contaminated Soil	Ares
			WHENHING DON	
> 130,000 to 13 million ft <sup>2</sup> > 2.9 to 290 acres	> 13 million ft <sup>2</sup> > 290 acres	ft <sup>2</sup> + 13 acres + 0.00029	Pile	
> C'3 M 720 M162			र इस्त	
>2.7 million to 270 million ft <sup>2</sup>	> 270 million ft <sup>2</sup>	ft <sup>2</sup> + 270	Load Tood =	
>62 to 6,200 acres	> 6,200 acres	acres + 0.0062	Land Treatment	

<sup>1</sup> m= 2,000 pounds=1 cubic yard= 4 drums = 200 gallons



#### HAZARDOUS WASTE QUANTITY (HWQ) CALCULATION

For each migration pathway, evaluate HWQ associated with sources that are available (i.e., incompletely contained) to migrate to that pathway. (Note: If Actual Contamination Targets exist for ground water, surface water, or air migration pathways, assign the calculated HWQ score or 100, whichever is greater, as the HWQ score for that pathway.) For each source, evaluate HWQ for one or more of the four tiers (Si Table 1; HRS Table 2-5) for which data exist: constituent quantity, wastestream quantity, source volume, and source area. Select the tier that gives the highest value as the source HWQ. Select the source volume HWQ rather than source area HWQ if data for both tiers are available.

Column 1 of SI Table 1 indicates the quantity tier. Column 2 lists source types for the four tiers. Columns 3, 4, 5, and 6 provide ranges of waste amount for sites with only one source, corresponding to HWO scores at the tops of the columns. Column 7 provides formulas to obtain source waste quantity values at sites with multiple sources.

- 1. Identify each source type.
- Examine all waste quantity data available for each source. Record constituent quantity and waste stream mass or volume. Record dimensions of each source.
- Convert source measurements to appropriate units for each tier to be evaluated.
- 4. For each source, use the formulas in the last column of SI Table 1 to determine the waste quantity value for each tier that can be evaluated. Use the waste quantity value obtained from the highest tier as the quantity value for the source.
- 5. Sum the values assigned to each source to determine the total site waste quantity.
- 6. Assign HWQ score from SI Table 2 (HRS Table 2-6).

Note these exceptions to evaluate soil exposure pathway HWQ (see HRS Table 5-2):

- The divisor for the area (square feet) of a landfill is 34,000.
- The divisor for the area (square feet) of a pile is 34.
- Wet surface impoundments and tanks and non-drum containers are the only sources for which volume measurements are evaluated for the soil exposure pathway.

SI TABLE 2: HWQ	SCORES FOR SITES			
Site WQ Total	HWQ Score			
0 .	0			
1ª to 100	16			
> 100 to 10,000	100			
> 10,000 to 1 million	10,000			
> 1 million	1,000,000			

a If the WQ total is between 0 and 1, round it to 1.

b If the hazardous constituent quantity data are not complete, assign the score of 10.

SI TABLE 3: WASTE CHARACTERIZA	TION WORKSHEET
Site Name: White Recours	References
Sources:	
145	78
36	9
GROUND	SURFACE WATER PATHWAY

ı									SUF	FACE	WATER	PATHV	VAY				AIR	
	SOURCE	GROUND WATER HAZARDOUS TOXICITY PATHWAY OVERLAND/					FLOOD MIGRATION				GROUND WATER TO SURFACE WATER			Pothogo				
C-1					GW Mobility (HRS Table 3-8)	Tox/ Mobility Value (HRS Table 3-9)	Per (HRS Tables 4-10 and 4-11)	Tox/Per Value (HRS Table 4-12)	Bloac Pot. (HRS Table 4-15)	Tox/ Pers/ Biosc Value (HRS Table 4-16)	Ecolox (HRS Table 4-19)	Ecolos/ Pers (HR3 Table 4-20)	Ecotox/ Pers/ cr.Bloace Value (HRS Table 4-21)	Tox/ Mob/ Pers Value (HRS Table 4-26)	Tost Mobt Perst Bloace Value (HRS Table 4-28)	Ecolos/ Mob/ Pers Value (HRS Table 4-29)	Ecotos/ Mob/ Per/ Bioacc Value (HRS Table 4-30)	Toxicity mobility
_		Money				1.0	7 - 2	50.0					14/5	~/5	w/s	4/0	N/4	
		Max lugar	Characte	<del></del>	<b> </b>		ļ	ļ		ļ	ļ	ļ	<b> </b>	<del></del>		<b> </b>	<b></b> .	
		ļ	10,000	1	10,000	1	10,000	50,000	5×+ ≥ <b>4</b>	10,000	10,000	54608	-15	10 /4	V/5	1/5	10,000	
		<b></b>			<b> </b>	<del> </del>	<b> </b>	<del> </del>	ļ	<b> </b> -	<del> </del>	<del> </del>	<del> </del>	<del> </del>	<del> </del>	<del> </del>	<del></del>	
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		<del> </del>	<u> </u>															
		ļ	<del> </del>	<del> </del>	<b></b>	<del> </del>	<del> </del>		<del> </del>	<del> </del>	<del> </del>	·}			<del> </del>	<del>                                     </del>	<b>-</b>	
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			<del> </del>		<del> </del>	<del> </del>	<del> </del>	<del> </del>	<del> </del>	<del> </del>	<del> </del>	<del>                                     </del>	1	<del> </del>	<del> </del> -	<del> </del>	<del></del>	
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#### Ground Water Observed Release Substances Summary Table

On SI Table 4, list the hazardous substances associated with the site detected in ground water samples for that aquifer. Include only those substances directly observed or with concentrations significantly greater than background levels. Obtain toxicity values from the Superfund Chemical Data Matrix (SCDM). Assign mobility a value of 1 for all observed release substances regardless of the aquifer being evaluated. For each substance, multiply the toxicity by the mobility to obtain the toxicity/mobility factor value; enter the highest toxicity/mobility value for the aquifer in the space provided.

#### Ground Water Actual Contamination Targets Summary Table

If there is an observed release at a drinking water well, enter each hazardous substance meeting the requirements for an observed release by well and sample ID on SI Table 5 and record the detected concentration. Obtain benchmark, cancer risk, and reference dose concentrations from SCDM. For MCL and MCLG benchmarks, determine the highest percentage of benchmark obtained for any substance. For cancer risk and reference dose, sum the percentages for the substances listed. If benchmark, cancer risk, or reference dose concentrations are not available for a particular substance, enter N/A for the percentage. If the highest benchmark percentage or the percentage sum calculated for cancer risk or reference dose equals or exceeds 100%, evaluate the population using the well as a Level II target. If these percentages are less than 100% or all are N/A, evaluate the population using the well as a Level II target for that aquifer.

SI TABLE 4:	GROUND WATER C	Bckgrd.	D RELEASE S	UBSTANCE	S (BY AQUI	FER)		
Sample ID	Hazardous Substance	Conc.	Mobility	References				
			ļ —					
<del></del>		<del></del>						
			ļ					
				<u> </u>				
			<del>                                     </del>					
	Highest Tox	cicity/Mobility						
SI TABLE 5	: GROUND WATER	ACTUAL	CONTAMINATIO	ON TARGET	rs			
Well ID:			Level I	Level II	_ Population Se	erved	Reference	s
Sample ID	Hazardous Substance	Conc. (μg/L)	Benchmark Conc. (MCL or MCLG)	% of Benchmark	Cancer Risk Conc.	% of Cancer Risk Conc.	RID	% of RfD
			Highest Percent		Sum of Percents		Sum of Percents	
Well ID:		<del></del>	Level I	Level II	_ Population S	erved	Reference	)\$
		Conc	Benchmark	% ol	Cancer Rick	% of Cancer		
Sample ID	Hazardous Substance	Conc. (μg/L)	Benchmark Conc. (MCL or MCLG)	% ol Benchmark	Cancer Risk Conc.	% of Cancer Risk Conc.	RID	% of RID

Highest Percent

Sum of

Percents

CONL

Sum of

Percents

#### GROUND WATER PATHWAY GROUND WATER USE DESCRIPTION

The s.	- in videola. by the Sever Shale of the Chickamas
	the late Ordovician wir. The Sovier Shah is
Typicali	, a calculate diale Hydraulic conductively
haves r	and from 2.2 x10 6 to 1.7x10 4 cm/sec. The ways
	eater about 15 miles from the Site. Power Offices draws
	- a spring located 134 miles south . Dithe site. The Location
	on System draws were from string located 3 4.
	57 OF The Size,

verage number of persons per household: 2.54 Reference R			
U 347 5	Piney Other	2000	Torrain
0	<u> </u>	CITY WATE SYSTEM	
3			
•			Ō
9			3
140	707^		Name (
•	26 TO		3010
231			231
5 <b>= 8</b>		589	1097
	0 0 0 140 231	2 Piney Orlines  2 7  140  2870	D PINEL OTTERS 20000 D ST. WATER SAME D TO THE ST. WATER SAME D TO T

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#### GROUND WATER PATHWAY WORKSHEET

LIKELIHOOD OF RELEASE	Score	Data Type	Refs
<ol> <li>OBSERVED RELEASE: If sampling data or direct observation support a release to the aquiller, assign a score of 550. Record observed release substances on SI Table 4.</li> </ol>	*550		
<ol> <li>POTENTIAL TO RELEASE: Depth to aquiter: 7ºleet. If sampling data do not support a release to the aquiter, and the site is in karst terrain or the depth to aquiter is 70 feet or less, assign a score of 500; otherwise, assign a score of 340. Optionally, evaluate potential to release according to HRS Section 3.</li> </ol>	240		
LR =	5 <b>5</b> 0		
TARGETS			
Are any wells part of a blended system? YesNo If yes, attach a page to show apportionment calculations.			
<ol> <li>ACTUAL CONTAMINATION TARGETS: If analytical evidence indicates that any target drinking water well for the aquifer has been exposed to a hazardous substance from the site, evaluate the factor score for the number of people served (SI Table 5).</li> </ol>			
Level I: people x 10 = Total =			•
4. POTENTIAL CONTAMINATION TARGETS: Determine the number of people served by drinking water wells for the aquifer or overlying aquifers that are not exposed to a hazardous substance from the site; record the population for each distance category in SI Table 6a or 6b. Sum the population values and multiply by 0.1.	109.1		
5. NEAREST WELL: Assign a score of 50 for any Level I Actual Contamination Targets for the aquifer or overlying aquifer. Assign a score of 45 if there are Level II targets but no Level I targets. If no Actual Contamination Targets exist, assign the Nearest Well score from SI Table 6a or 6b. If no drinking water wells exist within 4 miles, assign 0.	5		
6. WELLHEAD PROTECTION AREA (WHPA): If any source lies within or above a WHPA for the aquiler, or if a ground water observed release has occurred within a WHPA, assign a score of 20; assign 5 if neither condition applies but a WHPA is within 4 miles; otherwise assign 0.	0		<u>-</u>
7. RESOURCES: Assign a score of 5 if one or more ground water resource applies; assign 0 if none applies.			
<ul> <li>Imigation (5 acre minimum) of commercial food crops or commercial forage crops</li> <li>Watering of commercial livestock</li> <li>Ingredient in commercial food preparation</li> <li>Supply for commercial aquaculture</li> <li>Supply for a major or designated water recreation area, excluding drinking water use</li> </ul>	5		
Sum of Targets T≈	1/9./	-	

Assumed to evaluate worst the conditions

C-15

015 5)13

## TABLE 3-1 GROUND WATER HIGRATION PATHWAY SCORESHEET

#### Factor Categories and Factors

)			
Likelihood	of Release to an Aquifer	Haximum Value	Value Assigned
1. Observed Re	lease	550	
2. Potential to			
2g. Concair		10	10
2b. Net Pre		10	6
2c. Depth t		5	3
2d. Travel		35	15
2e. Pocenci			
	2a x (2b' + 2c + 2d)]	500	240
	f Release (higher of	202	
		550	·
lines 1 and 1	2e)	330	
· · · ·			,
Waste Charact	eristics		
	_		
4. Toxicity/Mobi	lity	. <b>a</b>	
5. Hazardous Was		4	
6. Waste Charact	•	100	
			<del></del>
Targets			
1118000	· ·		
~		50	
7. Negrest Well		/30 .	
8. Population			
8a. Level I (	`		<del></del>
8b. Level II	(	<b>/ b</b> · .	<del></del>
8c. Potential	. Concaminacióq	/ b _	
	n (lines 82 + 82 + 8c)/	ъ_	
9. Resources		5 _	
10. Wellhead Prote	ction Area	20 _	
ll. Targets (lines	7 + 8d + 9 + 10x	<b>b</b> .	•
•			
Ground Water H	igracion Score for an Aqu	ilker	
	,		
12 4-4-6 6			
12. Aquifer Score	111 62 50015	100	
[(lines 3 x 6 )	£ 14)/82,300]°	100	-
Ground Water Mi	gration Pathway Score		
13. Pathway Score (	Sou), (highest value fro	<b>a</b>	
line 12 for all	S <sub>gv</sub> ), (highest value fro aquifers evaluated) <sup>c</sup>	100	
	1		\ <u> </u>
Maximum value and	es to waste characterist	ics excessiv	
Maximum value noc a	nnlleshle	and managery.	<i>;</i> \
Cho nor reced as	ppicaute.		
Do not round to nea	rest integer.		_

## TABLE 3-2 CONTAINMENT FACTOR VALUES FOR GROUND WATER MIGRATION PATHWAY

All Sour	ces (except surface impoundments, land treatment, containers, and tanks)	Assigned Value
area (i.	of hazardous substance migration from source e., source area includes source and any associated ent structures).	10
No liner	•	10
	nce of hazardous substance migration from source liner, <u>and</u> :	
(a)	None of the following present: (1) maintained engineered cover, or (2) functioning and maintained run-on control system and runoff management system, or (3) functioning leachate collection and removal system immediately above liner.	10
(p)	Any one of the three items in (a) present.	9
(c)	Any two of the items in (a) present.	7
(d)	All three items in (a) present plus a functioning ground water monitoring system.	5
(e)	All items in (d) present, plus no bulk or non- containerized liquids nor materials containing free liquids deposited in source area.	3
area, dou removal s	the of hazardous substance migration from source ble liner with functioning leachate collection and system above and between liners, functioning ter monitoring system, and:	
(f)	Only one of the following deficiencies present in containment: (1) bulk or noncontainerized liquids or materials containing free liquids deposited in source area, or (2) no or nonfunctioning or normaintained run-on control system and runoff management system, or (3) no or normaintained engineered cover.	3

## TABLE 3-2 (Continued)

All Sources (Concluded)	
(g) None of the deficiencies in (f) present.	0
Source area inside or under maintained intact structure that provides protection from precipitation so that neither runoff nor leachate is generated, liquids or materials containing free liquids not deposited in source area,	0

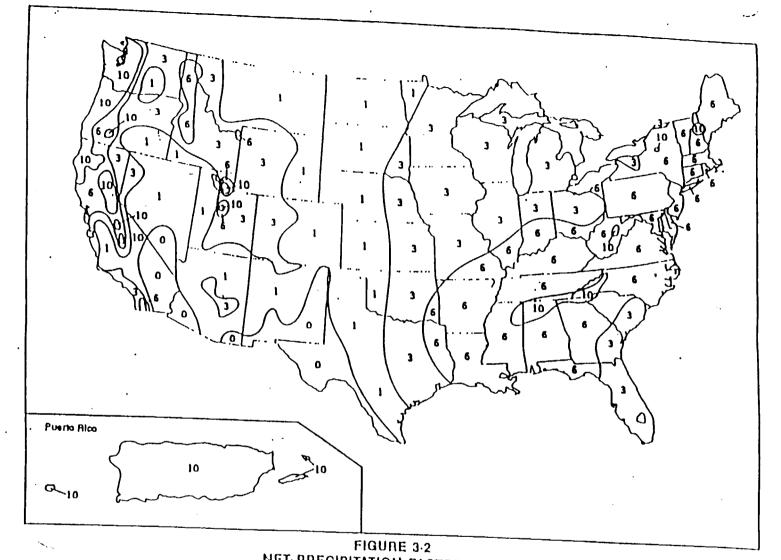


FIGURE 3-2
NET-PRECIPITATION FACTOR VALUES

## TABLE 3-5 DEPTH TO AQUIFER FACTOR VALUES

Depth To Aquifer* (feet)	Assigned Value
Lass them or equal to 25	5
Greater than 25 to 250	(3)
Greater than 250	l.

aUse depth of all layers between the hazardous substances and aquifer. Assign a thickness of 0 feet to any karst aquifer that underlies any portion of the sources at the site.

## TABLE 3-6 HYDRAULIC CONDUCTIVITY OF GEOLOGIC MATERIALS

Type of Macerial	Assigned Hydraulic Conductivity (cm/sec)		
Clay; low permeability till (compact unfractured till); shale; unfractured metamorphic and igneous rocks	10 <sup>-8</sup>		
Silt; loesses; silty clays; sediments that are predominantly silts; moderately permeable till (fine-grained, unconsolidated till, or compact till with some fractures); low permeability limestones and dolomites (no karst); low permeability sandstone; low permeability fractured igneous and metamorphic rocks	10-6		
Sands; sandy silts; sediments that are predominantly sand; highly permeable till (coarse-grained, unconsolidated or compact and highly fractured); peat; moderately permeable limestones and dolonites (no karst); moderately permeable sandstone; moderately permeable fractured igneous and metamorphic rocks	10 <sup>-4</sup>		
Gravel; clean sand; highly permeable fractured igneous and metamorphic rocks; permeable basalt; karst limestones and dolomites	10-2		

<sup>\*</sup>Do not round to nearest integer.

TABLE 3-7
TRAVEL TIME FACTOR VALUES\*

	Thickness of Lowest Hydraulic Conductivity Layer(s) <sup>b</sup> (feet)			
Hydraulic Conductivity (c=/sec)	Greater than 3 to 5	Greater than 5 to 100	Greater than 100 to 500	Greater than 500
Greater than or equal to 10 <sup>-3</sup>	35	35	35	25
Less than 10 <sup>-3</sup> to 10 <sup>-5</sup>	35	25	15	1.5
Less than 10 <sup>-5</sup> to 10 <sup>-7</sup>	15	(15)	.5.	5
Less than 10 <sup>-7</sup>	5 .	5	1	. 1

<sup>\*</sup>If depth to aquifer is 10 feet or less or if, for the interval being evaluated, all layers that underlie a portion of the sources at the site are karst, assign a value of 35.

bConsider only layers at least 3 feet thick. Do not consider layers or portions of layers within the first 10 feet of the depth to the aquifer.

# SI TABLE 6 (From HRS TABLE 3-12): VALUES FOR POTENTIAL CONTAMINATION GROUND WATER TARGET POPULATIONS

SI Table 6a: Other Than Karst Aquifers

{								Populat	on Serva	d by Well	s within Di	stance Cat	egory				
	Distance from Site	Рор.	Nearest Well (choose highest)	1 to 10	11 to 30	31 to 100	101 to 300	301 to 1000	1001 to 3000	3001 lo 10,000	10,001 to 30,000	30,001 to 100,000	100,001 to 300,000	300,001 to 1,000,000	1,000,000 to 3,000,000	Pop. Value	Ref.
	0 to $\frac{1}{4}$ mile	9	20	4	17	53	164	522	1,633	5,214	16,325	52,137	163,246	521,360	1,632,455		
	> 1/4 to 1/2	Э	18	2	11	33	102	324	-1,013	3,233	10,122	32,325	101,213	323,243	1,012,122		
C	> 1/2 to 1	5	9	1	5	17	52	167	523	1,669	5,224	16,684	52,239	166,835	522,385		
<u>-1</u>	> 1 to 2 miles	3010	5	0.7	3	10	30	94	294	939	2,939	9,385	29,384	93,845	293,842	939	
	> 2 to 3 miles	731	3	0.5	2	7	(21)	68	212	678	2,122	6,778	21,222	67,777	212,219	21	
	>3 to 4 miles	1000	2	0,3	1	4	13	AZ.	(31)	417	1,306	4,171	13,060	41,709	130,596	13/	
	Nearest	Well =	5										٧.		Sum =	1091	

 $\hat{C}$ 

# SI TABLE 6 (From HRS TABLE 3-12): VALUES FOR POTENTIAL CONTAMINATION GROUND WATER TARGET POPULATIONS (continued)

SI Table 6b: Karst Aquifers

ſ					Population Served by Wells within Distance Category												
	Distance from Site	Рор.	Nearest Well (choose highest)	1 10 10	11 10 30	31 10 100	101 to 300	301 10 1000	1001 to 3000	3001 to 10,000	10,001 to 30,000	30,001 to 100,000	100,001 to 300,000	300,001 to 1,000,000	1,000,000 lo 3,000,000	Pop. Value	Rel,
	0 to 1/4 mlle		20	4	17	53	164	522	1,633	5,214	18,325	52,137	163,246	521,360	1,632,455		
	$> \frac{1}{4} \text{ to } \frac{1}{2}$ mile		20	2	11	33	102	324	1,013	3,233	10,122	32,325	101,213	323,243	1,012,122		
C	> 1/2 to 1		20	2	9	26	82	261	817	2,607	8,163	28,068	81,623	280,680	816,227		
-17	> 1 to 2 miles		20	2	9	26	82	261	817	2,607	8,163	26,068	81,623	260,680	816,227		
	> 2 to 3 miles		20	2	9	26	82	261	817	2,607	8,163	26,068	81,623	260,680	816,227		
	>3 to 4 miles		20	2	9	26	82	261	817	2,607	8,163	26,068	81,623	260,680	816,227		
	Nearest '	Well =												•	Sum =		

### **GROUND WATER PATHWAY WORKSHEET (concluded)**

WA	STE CHARACTERISTICS		Score	Data Type	Does not Apply
8.	If any Actual Contamination Tan overlying aquifers, assign the ca quantity score or a score of 100, Contamination Targets exist, as quantity score calculated for sou ground water.	lculated hazardous waste whichever is greater; if no Actual sign the hazardous waste	ĮD		
9.	Assign the highest ground water Table 3 or 4.	toxicity/mobility value from SI	10 ,C2Q •		
10.	Multiply the ground water toxicity quantity scores. Assign the Was table below: (from HRS Table 2-	te Characteristics score from the			
	Product 0 >>0 to <10 10 to <100 100 to <1,000 1,000 to <10,000 10,000 to <1E + 05 1E + 05 to <1E + 06 1E + 06 to <1E + 07 1E + 07 to <1E + 08 1E + 08 or greater	WC Score  0 1 2 3 6 10 18 32 56 100	; <b>4</b>		-
		. WC =	18		· '

Multiply LR by T and by WC. Divide the product by 82,500 to obtain the ground water pathway score for each aquifer. Select the highest aquifer score. If the pathway score is greater than 100, assign 100.

GROUND WATER PATHWAY SCORE:

(550) ( ) ((5) LH X T X WC 82,500

(Maximum of 100)

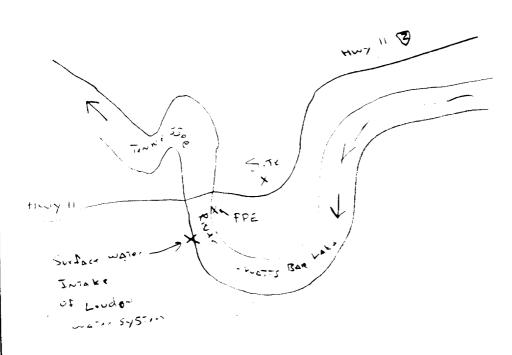
\* Noce : Human is not amended & have done to 175 MAL OF a Ton of

C-18

### SURFACE WATER PATHWAY

Sketch of the Surface Water Migration Route:

Label all surface water bodies. Include runoff route and drainage direction, probable point of entry, and 15-mile target distance limit. Mark sample locations, intakes, fisheries, and sensitive environments. Indicate flow directions, tidal influence, and rate.



Pistare to TFE. 2000/ (10 miles 592)

Remose come to PPE december by topographic from 10 of
the Stainings Ales.

The Siturce des a An urban an industrial area, Runoff must Flow over roads, gas stations, factories, and only loss reserved betwee reacting cloppe.

### SURFACE WATER PATHWAY

#### Surface Water Observed Release Substances Summary Table

On SI Table 7, list the hazardous substances detected in surface water samples for the watershed, which can be attributed to the site. Include only those substances in observed releases (direct observation) or with concentration levels significantly above background levels. Obtain toxicity, persistence, bioaccumulation potential, and ecotoxicity values from SCDM. Enter the highest toxicity/persistence, toxicity/persistence/bioaccumulation, and ecotoxicity/persistence/ecobioaccumulation values in the spaces provided.

- TP = Toxicity x Persistence
- TPB = TP x bioaccumulation
- ETPB = EP x bioaccumulation (EP = ecotoxicity x persistence)

#### Drinking Water Actual Contamination Targets Summary Table

For an observed release at or beyond a drinking water intake, on SI Table 8 enter each hazardous substance by sample ID and the detected concentration. For surface water sediment samples detecting a hazardous substance at or beyond an intake, evaluate the intake as Level II contamination. Obtain benchmark, cancer risk, and reference dose concentrations for each substance from SCDM. For MCL and MCLG benchmarks, determine the highest percentage of benchmark obtained for any substance. For cancer risk and reference dose, sum the percentages of the substances listed. If benchmark, cancer risk, or reference dose concentrations are not available for a particular substance, enter N/A for the percentage. If the highest benchmark percentage or the percentage sum calculated for cancer risk or reference dose equals or exceeds 100%, evaluate the population served by the intake as a Level I target. If the percentages are less than 100% or all are N/A, evaluate the population served by the intake as a Level II target.

	and conscinition	Bckgrd. Conc.	Toxicity/ Persistence	Persis./ Bioaccum	Persis/ Ecobloaccum	References		
Sample ID	Hazardous Substance	Conc.	L 61212/4/104	Dioaccum	Econoaccum	Valetatices		
				·· <del></del>				
<del></del>					<del></del>			
			·		<del></del>			
	l Hiç	hest Values						
N TARIF A	SURFACE WATER	DRINKING	WATER ACT	UAL CON	TAMINATION	TARGETS		
ntake ID:	Sample Type			(9) 1	Level II	Population Served	Helere	nces
Sample ID	Hazardous Substance	Conc. (jig/L)	Benchmark Conc. (MCL or MCLG)	% of Benchmark	Cancer Risk Conc.	% of Cancer Risk Conc,	RID	% of RID
			<u> </u>					
	•		Highest Percent		Sum of Percents		Sum of Percents	
ntake ID:	Sample Type		Lev	/el l	Level II	Population Served	dRefere	nces
			Benchmark			1		
Sample ID	Hazardous Substance	Conc. (µg/L)	Conc. (MCL or MCLG)	% of Benchmark	Cancer Risk Conc.	% of Cancer Risk Conc.	RID	% of RID
<del></del>		<u></u>	Wahaal		<u> </u>			
		1	Highest Percent		Sum of v Percents		Sum of Percents	

Toxicity/

Ecotoxicity/ Persis/

SI TABLE 7: SURFACE WATER OBSERVED RELEASE SUBSTANCES

## SURFACE WATER PATHWAY LIKELIHOOD OF RELEASE AND DRINKING WATER THREAT WORKSHEET

01	KELIHOOD OF RELEASE~ /ERLAND/FLOOD MIGRATION		S∞re	Data Type	Rels
1.	OBSERVED RELEASE: If sampling data or direct obser support a release to surface water in the watershed, assi		1*	[	
ĺ	of 550. Record observed release substances on SI Tab		,	I	<u></u>
2.	POTENTIAL TO RELEASE: Distance to surface water:	(feet)			
ľ	If sampling data do not support a release to surface water			!	1
1	watershed, use the table below to assign a score from th		<b>J</b>	1	[
1	below based on distance to surface water and flood freq	uency.		1	
	Distance to surface water <2500 feet 50	0			
l	Distance to surface water >2500 feet, and:		1		
1	Site in annual or 10-yr floodplain 50	0		[	
ł	Site in 100-yr floodplain 40	0	770		}
	Site in 500-yr floodplain 30	0	47	1	
	Site outside 500-yr floodplain 10	0	[	[ ]	<b>1</b>
<u> </u>	Optionally, evaluate surface water potential to release according to HRS Section 4.1.2.1.2		270		
		LR =		]	•
t tk	ELIHOOD OF RELEASE			Data	
	OUND WATER TO SURFACE WATER MIGRATIC	N	Score	Type	Refs
	OBSERVED RELEASE: It sampling data or direct observed				
	support a release to surface water in the watershed, assig			<b>i</b> [	1
	of 550. Record observed release substances on SI Table	<b>9</b> 7.		} }	1
	TE: Evaluate ground water to surface water migration only surface water body that meets all of the following condition		D/3		
	A portion of the surface water is within 1 mile of site source	es having	\ '	}	{
	a containment factor greater than 0.			}	ł
	No aquifer discontinuity is established between the source above portion of the surface water body.	e and the			J
	The top of the uppermost aguiler is at or above the bottom	n of the		}	1
	Surface water.			]	1
<b>~</b> 1				i (	f

Elevation of top of uppermost aquifer
Elevation of bottom of surface water body

2. POTENTIAL TO RELEASE: Use the ground water potential to release. Optionally, evaluate surface water potential to release according to HRS Section 3.1.2.

LR =

5) 11 6) 1 6) 200 36) 0

The Assumed release was Not evaluated due to
the presence of roads, Sas Stations and factories residing
between the little and the PPE, the thereby greatly
reducing The Actual Historyhood of A release to the
Temperate River. The presence of Sich industries makes
C-23
I extremely difficult to A release to the Site.

TABLE 4-1 SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT SCORESHEET

tor Categories and Factors	Maximum Value	Value Assigned
NKING WATER THREAT		
Likelihood of Release		
Observed Release	550	
Potential to Release by		<del></del>
Overland Flow		•
2a. Containment	10	10 from p. C-23AY: 11 from p. C-23E 9 from p. C-23F
2b. Runoff	25	1
2c. Distance to Surface Water	25	a 100 p. C-20 E
2d. Potential to Release by		tran p. C-23F
Overland Flow		
(lines 2a x [2b + 2c])	500	200
Pocential to Release by Flood	500	<del></del>
3a. Containment (Flood)	10	15 C 0 C-23 E1/2
3b. Flood Frequency	50	Framp. C-23 F/2
3c. Potential to Release	70	Tromp. C-23 G
by Flood (lines 3a x 3b)	500	<del>~</del> ?
Potential to Release	500	<del></del>
(lines 2d + 3c, subject to	500	270
maximum of 500)	500	
ikelihood of Release	550	2 <del>7</del> 0
(higher of lines 1 and 4)	550	
Maste Characteristics		
Toxicity/Rersistence	· /	
dazardous Wasse Quantity	3	<del></del>
laste Characteristics	100	
Targets		•
Vearest Intake	50	•
opulation		
Oa. Level I Concentrations	ь	
Ob. Level II Concentrations	\ b	
Oc. Potential Contamination	\ \frac{1}{2}	
Od. Population	. ~	
(lines 10a + 10b + 10c)	ъ ,	
(lines lug + luo + luc)	5	_
SC200TC42	J	<del></del>

### TABLE 4-2 CONTAINMENT FACTOR VALUES FOR SURFACE WATER MIGRATION PATHWAY

All Sources (except surface impoundments, land treatment, containers, and tanks)	Assigned Value
Evidence of hazardous substance migration from source area (i.e., source area includes source and any associated containment structures).	10
No evidence of hazardous substance migration from source area <u>and</u> :	
(a) Neither of the following present: (1) maintained engineered cover, or (2) functioning and maintained run-on control system and runoff management system.	10
(b) Any one of the two items in (a) present.	9
(c) Any two of the following present: (1) maintained engineered cover, or (2) functioning and maintained run-on control system and runoff management system, or (3) liner with functioning leachate collection and removal system immediately above liner.	7
(d) All items in (c) present.	5
(e) All items in (c) present, plus no bulk or non- containerized liquids nor materials containing free liquids deposited in source area.	3
No evidence of hazardous substance migration from source area, double liner with functioning leachate collection and removal system above and between liners, and:	
(f) Only one of the following deficiencies present in containment: (1) bulk or noncontainerized liquids or materials containing free liquids deposited in source area, or (2) no or nonfunctioning or nonmaintained run-on control system and runoff management system, or (3) no or nonmaintained engineered cover.	3
	, O

## CONFIDENTIAL

#### TABLE 4-3 DRAINAGE AREA VALUES

Drainage Area (acres)	Assigned Value
Less than 50	1
50 to 250	2
Greater than 250 to 1,000	(3)
Greater than 1,000	4

across a source based on observing topographic map of the area.

## TABLE 4-4 SOIL GROUP DESIGNATIONS

Surface Soil Description	Soil Group Designation
Coarse-textured soils with high infiltration rates (for example, sands, loany sands)	<b>A</b> ·
Medium-textured soils with moderate infiltration rates (for example, sandy loans, loans)	8
Moderately fine-textured soils with low infiltration rates (for example, silty loans, silts, sandy	<b>c</b>
clay loams)	D Cooking Co
Fine-textured soils with very low infiltration rates (for example, clays, sandy clays, silty clay loams, clay loams, clay loams, clay loams, silty clays); or	get into from Soil Survey
mpermeable surfaces (for example, avenent)	

TABLE 4-5
RAINFALL/RUNOFF VALUES

2-Year, 24-Hour	1.	Soil Group Designation		•
Rainfall (inches)	Α .	В	·c	D
Less than 1.0	, o	o	2	3
1.0 to less than 1.5	0	1	2	3
1.5 to less than 2.0	0	2	3	4
2.0 to less than 2.5	1	2	3	. 4
.5 to less than 3.0	! ! 2	3	4	4
.O to less that 3.5	. 2	3	4	(5)
.5 or greater	3	4	5	6

Rainfall frequency other

TABLE 4-6
RUNOFF FACTOR VALUES

Drainage		- Reinfall/Rumoff Value									
Area Value	0	1	2	3	4	5	. 6				
1.	10	0	0	1	1	1	1				
2	0	0	1	1	2	3	4				
3	   0	0	1	3	7		15				
<b>4</b>	0	1	2	7	17	25	25				

TABLE 4-7
DISTANCE TO SURFACE VALUES FACTOR VALUES

Distance	Assigned Value
Less than 100 feet	· 25
100 feet to 500 feet .	. 20
Greater than 500 feet to 1,000 feet	16
Freater than 1,000 feet to 2,500 feet	$\widehat{\mathcal{G}}$
reacer than 2,500 feet to 1.5 miles	. 6
reacer than 1.5 miles to 2 miles	3

TABLE 4-8
CONTAINMENT (FLOOD) FACTOR VALUES

Containment Criteria	Assigned Value
Documentation that containment at the source is designed, constructed, operated, and maintained to prevent a washout of hazardous substances by the flood being evaluated	
Other	10

TABLE 4-9
FLOOD FREQUENCY FACTOR VALUES

Floodplain Category	Assigned Value
Source floods annually .	<b>5</b> 0 <sub>.</sub>
Source in 10-year floodplain	50
Source in 100-year floodplain	25
Source in 500-year floodplain	7
None of above	· <b>o</b>

# SURFACE WATER PATHWAY LIKELIHOOD OF RELEASE AND DRINKING WATER THREAT WORKSHEET (CONTINUED)

DRINKING WATER THREAT TARGETS	Score	Data Type	Reis
Record the water body type, flow, and number of people served by each drinking water intake within the target distance limit in the watershed. If there is no drinking water intake within the target distance limit, assign 0 to factors 3, 4, and 5.		1,750	
Intake Name Water Body Type Flow People Served  Country Charter Distr. (Lance Provided Provid			
Are any intakes part of a blended system? Yes X No No If yes, attach a page to show apportionment calculations.			
<ol> <li>ACTUAL CONTAMINATION TARGETS: If analytical evidence indicates a drinking water intake has been exposed to a hazardous substance from the site, list the intake name and evaluate the factor score for the drinking water population (SI Table 8).</li> </ol>			
Level I:people x 10 = Total =	C		
<ol> <li>POTENTIAL CONTAMINATION TARGETS: Determine the number of people served by drinking water intakes for the watershed that have not been exposed to a hazardous substance from the site.</li> <li>Assign the population values from SI Table 9. Sum the values and multiply by 0.1.</li> </ol>	10		
5. NEAREST INTAKE: Assign a score of 50 for any Level I Actual Contamination Drinking Water Targets for the watershed. Assign a score of 45 if there are Level II targets for the watershed, but no Level I targets. If no Actual Contamination Drinking Water Targets exist, assign a score for the Intake nearest the PPE from SI Table 9. If no drinking water intakes exist, assign 0.	( )		•
6. RESOURCES: Assign a score of 5 if one or more surface water resource applies; assign 0 if none applies.  • Irrigation (5 acre minimum) of commercial food crops or commercial forage crops  • Watering of commercial livestock  • Ingredient in commercial food preparation  • Major or designated water recreation area, excluding drinking water use	5		<b>k</b> 5% 1
CIM OF TARGETS T	2, 4		

of Total Lustomers and Lucion city have experiences to EAR proper. 90% of these comments

# SI TABLE 9 (From HRS Table 4-14): DILUTION-WEIGHTED POPULATION VALUES FOR POTENTIAL CONTAMINATION FOR SURFACE WATER MIGRATION PATHWAY

						Numt	per of	people		,		
Type of Surface Water Body	Pop.	Nearest Intake	0	1 10 10	1 1 to 3 0	31 to 100	101 to 300	301 to 1,000	1,001 lo 3,000	3,001 to 10,000	10,001 to 30,000	Pop. Valua
Minimal Stream (<10 cfs)	D	20	0	4	17	53	164	522	1,633	5,214	16,325	
Small to moderate stream (10 to 100 cfs)	7	2	0	0.4	2	5	16	52	163	521	1,633	
Moderate to large atream (> 100 to 1,000 cfs)	G2:18	0	0	0.04	0.2	0.5	2	5	16	52 '	163	
Large Stream to river (>1,000 to 10,000 cfs)		0	0	0.004	0.02	0.05	0.2	0.5	2	5	16	
Large River (> 10,000 to 100,000 cfs)		0	0	0	0.002	0.005	0.02	0.05	0.2	0.5	18	
Very Large River (>100,000 cfs)		0	0	0	0	0.001	0.002	0.005	0.02	0.05	0.2	
Shallow ocean zone or Great Lake (depth < 20 feet)		0	0	0	0.002	0.005	0.02	0.05	0.2	0.5	2	
Moderate ocean zone or Great Lake (Depth 20 to 200 feet)		0	0	0	0	0.001	0.002	0.005	0.02	0.05	0.2	
Deep ocean zone or Great Lake (depth > 200 feet)		0	0	0	0	0	0.001	0.003	0.008	0.03	0.08	
3-mile mixing zone in quiet flowing river (2 10 cfs)		10	0	2	9	26	82	281	817	2,607	8,163	
Negrest 1	ntake =	()	·						ر - د -	<del></del>	Sum =	r)

<b>\</b>	
References	

			Number of	People	
Type of Surface Water Bodyb	30,001 to 100,000	100,001 to 300,000	300,001 to 1,000,000	1,000,001 to 3,000,000	3,000,001 to 10,000,000
Hinimal stream (< 10 cfs)	52,137	163,246	521,360	1,632,455	5,213,590
Small to moderate stream (10 to 100 cfs)	5,214	16,325	52,136	163,245	521,359
Hoderate to large stream (> 100 to 1,000 cfs)	521	1,633	5,214	16,325	52,136
Large stream to river (> 1,000 to 10,000 cfs)	52	163	521	1,632	5,214
Large river (> 10,000 to 100,000 cfs)	5	16	52	163	521
Very large river (> 100,000 cfs)	0.5	2	5	16	52
Shallow ocean zone or Great Lake (depth < 20 feet)	5	16	52	163	521
Hoderate ocean zone or Great Lake (depth 20 to 200 feet)	0.5	2	5	16	52
Deep zone or Great Lake (depth > 200 feet)	0.3	1	3	8	26
3-mile mixing zone in quiet flowing river (≥ 10 cfs)	26,068	81,623	260,680	816,227	2,606,795

<sup>\*</sup>Round the number of people to nearest integer. Do not round the assigned dilution-weighted population value to nearest integer.

bTreat each lake as a separate type of water body and assign it a dilution-weighted population value using the surface water body type with the same dilution weight from Table 4-13 as the lake. If drinking water is withdrawn from coastal tidal water or the ocean, assign a dilution-weighted population value to it using the surface water body type with the same dilution weight from Table 4-13 as the coastal tidal water or the ocean zone.

#### SURFACE WATER PATHWAY

#### Human Food Chain Actual Contamination Targets Summary Table

On SI Table 10, list the hazardous substances detected in sediment, aqueous, sessile benthic organism tissue, or fish tissue samples (taken from fish caught within the boundaries of the observed release) by sample ID and concentration. Evaluate fisheries within the boundaries of observed releases detected by sediment or aqueous samples as Level II, it at least one observed release substance has a bloaccumulation potential factor value of 500 or greater (see SI Table 7). Obtain benchmark, cancer risk, and reference dose concentrations from SCDM. For FDAAL benchmarks, determine the highest percentage of benchmark obtained for any substance. For cancer risk and reference dose, sum the percentages for the substances listed. If benchmark, cancer risk, or reference dose concentrations are not available for a particular substance, enter N/A for the percentage. If the highest benchmark percentage sum calculated for cancer risk or reference dose equals or exceeds 100%, evaluate this portion of the fishery as subject to Level I concentrations. If the percentages are less than 100% or all are N/A, evaluate the fishery as a Level II target.

### Sensitive Environment Actual Contamination Targets Summary Table

On SI Table 11, list each hazardous substance detected in aqueous or sediment samples at or beyond wetlands or a surface water sensitive environment by sample ID. Record the concentration. If contaminated sediments or tissues are detected at or beyond a sensitive environment, evaluate the sensitive environment as Level II. Obtain benchmark concentrations from SCDM. For AWQC/AALAC benchmarks, determine the highest percentage of benchmark of the substances detected in aqueous samples. If benchmark concentrations are not available for a particular substance, enter N/A for the percentage. If the highest benchmark percentage equals or exceeds 100%, evaluate that part of the sensitive environment subject to Level I concentrations. If the percentage is less than 100%, or all are N/A, evaluate the sensitive environment as Level II.

ery ID:	HUMAN FOOD CH		Benchmark			% of Cancer Risk		av =4 DID
1.10	Hazardous Substance	Conc. (mg/kg)	Concentration (FDAAL)	% of Benchmark	Cancer Risk Concentration.	Concentration	RID	% of RID
ample ID	11000							
					Sum of		Sum of	
		L	Highest Percent		Percents		Percents	
TABLE 1	I1: SENSITIVE ENV	ample Type _	Benchmark	T	'	L8701 11	Environment V	
		1						
Samole ID	Hazardous Substance	Conc (µg/L)	Concentration (AWQC or AALAC)	% of Benchmark	References	 		
Sample ID	Hazardous Substance		(AWQC or	1 70 01	References			
Sample ID	Hazardous Substance		(AWQC or AALAC)	1 70 01	References			
Sample ID	Hazardous Substance		(AWQC or	1 70 01	References	   		4 Vakus
		(μg/L)	(AWQC or AALAC) , Highest Percent	Benchmark Lev	Relarences	   	Envkonmen	g Value
Environment	ID:	Sample Type	(AWQC or AALAC)  Highest Percent  Concentration (AWQC or AALAC)	Benchmark  Levelonder 1 % of	/ol 1	  Level II	Envkonmen	(Value
	ID:	Sample Type	(AWQC or AALAC)  Highest Percent  Concentration (AWQC or AALAC)	Benchmark  Levelonder 1 % of	/ol 1	  Level II	Envkonmen	g Value

## SURFACE WATER PATHWAY (continued) HUMAN FOOD CHAIN THREAT WORKSHEET

HUMAN FOOD CHAIN THREAT T	ARGETS	Score	Type	Refs
Record the water body type and flut target distance limit. If there is no distance limit, assign a score of 0 a	ishery within the target			
Fishery Name WATTS Water Body To	Flow 3000 cts			
RAC	2			
Species Production Production	the/vr	ì		
Openius Froduction.		j	] ]	
Fishery Name Water Body	Flowcts			
Species Production_	lbs/yr			
Species Production_ Species Production_	lbs/yr		1	
Fishery Name Water Body	Flowcts			
Species Production	IhsArr			
Species Production_ Species Production_	lbs/yr			.
				-
FOOD CHAIN INDIVIDUAL				}
				}
<ol> <li>ACTUAL CONTAMINATION FISHE</li> </ol>	RIES:		1	į
If analytical evidence indicates that a hazardous substance with a bioac or equal to 500 (SI Table 10), assign Level I fishery. Assign 45 if there is I fishery.	cumulation factor greater than a score of 50 if there is a			
8. POTENTIAL CONTAMINATION FIS	HERIES:	İ		
If there is a release of a substance w greater than or equal to 500 to a wa within the target distance limit, but the fishenes, assign a score of 20.	tershed containing fisheries			-
If there is no observed release to the for potential contamination fisheries the lowest flow at all fisheries within	from the table below using			
Lowest Flow	FCI Value	ļ	ļ	
<10 ds	20	ļ	l	
10 to 100 cfs	2	1	1	1
>100 cts, coastal tidal waters,		$\circ$ 1	<b>!</b>	
oceans, or Great Lakes	1	-	ļ	1
3-mile mixing zone in quiet (lowing river	10	ì		1
The state of the s	·	į	j	-
	FCI Value =	1		
	SUM OF TARGETS T-	0		

# SURFACE WATER PATHWAY (continued) ENVIRONMENTAL THREAT WORKSHEET

When measuring length of wetlands that are located on both sides of a surface water body, sum both frontage lengths. For a sensitive environment that is more than one type, assign a value for each type.

								Data	
			REAT TARGE			·	Score	Туре	Rels
			type and flow for					1	1
			within the target o						
			environment within		rget disti	ance lamit,	1	ł	
ass	sign a score	oi o an tr	ne bottom of the p	oage.			1	l	
Forimo	ment Name		Water Body Type		Flor		rl lr	1	
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Environn	nent Name	Environ	ment Type and		er (10 for	Product			
		Value (S	SI Tables 13 & 14)	Level L		İ		i i	1
				Level II	<u> </u>		<b> </b>	] ]	1
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10. PO	TENTIAL CO	IMATM	NATION SENSITI	VE EN	/IRONM		<del></del>		
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Flow	Dilution Weig	ht	Environment Type	e and	Pol.	Product			
	(SI Table 12)		Value (SI Tables				}	}	1
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## SI TABLE 12 (HRS Table 4-13): SURFACE WATER DILUTION WEIGHTS

Type of Surface Water Body		Assigned Dilution Weight
	Flow Characteristics	1
Descriptor	< 10 c/s	1'
Minimal stream	10 to 100 cfs	0.1
Small to moderate stream	> 100 to 1,000 cfs	(0.01)
Moderate to large stream		0.001
Large stream to river	> 1,000 to 10,000 cfs	
	> 10,000 to 100,000 cfs	0.0001
Large river	> 100,000 cfs	0.00001
Very large river	Flow not applicable; depth not applicable	0.001-
Coastal tidal waters	Flow flot applicable, depth loss than 20 lest	0.001
Shallow ocean zone or Great Lake	Flow not applicable; depth less than 20 feet	0.0001
Moderate depth ocean zone or Great Lake	Flow not applicable; depth 20 to 200 feet	0.000
Moderate depth ocean zone of contract	Flow not applicable; depth greater than 200 feet	0.000005
Deep ocean zone or Great Lake	10 cfs or greater	0.5
3-mile mixing zone in quiet flowing river	In the or Aratio	

### SI TABLE 13 (HRS TABLE 4-23): SURFACE WATER AND AIR SENSITIVE ENVIRONMENTS VALUES

Critical habitat for Federal designated endangered or threatened species  Marine Sanctuary  National Park  Designated Federal Wilderness Area  Ecologically important areas identified under the Coastal Zone Wilderness Act  Sensitive Areas identified under the National Estuary Program or Near Coastal  Water Program of the Clean Water Act  Critical Areas identified under the Clean Lakes Program of the Clean Water Act  (subareas in lakes or entire small lakes)  National Monument (air pathway only)  National Seashore Recreation Area  Habitat known to be used by Federal designated or proposed endangered or threatened species  National Preserve  Habitat known to be used by Federal designated or proposed endangered or threatened species  National Preserve  National Preserve  Habitat known to be used by Federal designated or proposed endangered or threatened species  National Preserve  On Coastal Barrier Resources System  Coastal Barrier (undeveloped)  Federal land designated for the protection of natural ecosystems  Administratively Proposed Federal Wilderness Area  Spawning areas critical for the maintenance of fishyshelfish species within a river system, bay, or estuary  Migratory pathways and feeding areas critical for the maintenance of anadromous fish species within river reaches or areas in lakes or coastal tidal waters in which the fish spend extended periods of time  Terrestrial areas utilized by large or dense aggregations of vertebrate animals (semi-aquatic foragers) for breeding  National river reach designated as recreational  Habitat known to be used by State designated endangered or threatened status  Coastal Barrier (partially developed)  Federally designated Science or Wild River  State designated Science or Wild River  State designated Science or Wild River  State designated Science or Wild River  State designated Astural Area  Particular areas, relatively small in size, important to maintenance of unique biotic communities	SENSITIVE ENVIRONMENT	ASSIGNED VALUE	]
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Designated Federal Wilderness Area Ecologically important areas identified under the Coastal Zone Wilderness Act Sensitive Areas identified under the National Estuary Program or Near Coastal Water Program of the Clean Water Act Critical Areas identified under the Clean Lakes Program of the Clean Water Act (subareas in takes or entire small takes) National Monument (air pathway only) National Seashore Recreation Area National Lakeshore Recreation Area Habitat known to be used by Federal designated or proposed endangered or threatened species National Preserve National or State Wildfire Refuge Unit of Coastal Barrier Resources System Coastal Barrier (undeveloped) Federal land designated for the protection of natural ecosystems Administratively Proposed Federal Wilderness Area Spawning areas critical for the maintenance of fish/shelffish species within a river system, bay, or estuary Migratory pathways and feeding areas critical for the maintenance of anadromous fish species within river reaches or areas in lakes or coastal tidal waters in which the fish spend extended periods of time Terrestrial areas utilized by large or dense aggregations of vertebrate animals (semi-aquatic foragers) for breeding National river reach designated as recreational Habitat known to be used by State designated endangered or threatened species Habitat known to be used by a species under review as to its Federal endangered or threatened status Coastal Barrier (partially developed) Federally designated Scenic or Wild River State designated Acenic or Wild River State designated Acenic or Wild River State designated areas for the protection of maintenance of unique biotic communities State designated areas for the protection of maintenance of unique biotic communities	Marine Sanctuary	]	}
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tidal waters in which the fish spend extended periods of time  Terrestrial areas utilized by large or dense aggregations of vertebrate animals (semi-aquatic foragers) for breeding  National river reach designated as recreational  Habitat known to be used by State designated endangered or threatened species  Habitat known to be used by a species under review as to its Federal endangered or threatened status  Coastal Barrier (partially developed)  Federally designated Scenic or Wild River  State land designated for wildlife or game management State designated Scenic or Wild River  State designated Natural Area  Particular areas, relatively small in size, important to maintenance of unique biotic communities  State designated areas for the protection of maintenance of aquatic life under the Clean Water  5	Migratory pathways and feeding areas critical for the maintenance of	}	
Terrestrial areas utilized by large or dense aggregations of vertebrate animals (semi-aquatic foragers) for breeding National river reach designated as recreational Habitat known to be used by State designated endangered or threatened species Habitat known to be used by a species under review as to its Federal endangered or threatened status Coastal Barrier (partially developed) Federally designated Scenic or Wild River State land designated for wildlife or game management State designated Scenic or Wild River State designated Natural Area Particular areas, relatively small in size, important to maintenance of unique biotic communities State designated areas for the protection of maintenance of aquatic life under the Clean Water  5 Act	anadromous fish species within river reaches or areas in lakes or coastal		
(semi-aquatic foragers) for breeding  National river reach designated as recreational  Habitat known to be used by State designated endangered or threatened species  Habitat known to be used by a species under review as to its Federal endangered  or threatened status  Coastal Barrier (partially developed)  Federally designated Scenic or Wild River  State land designated for wildlife or game management  State designated Scenic or Wild River  State designated Natural Area  Particular areas, relatively small in size, important to maintenance of unique biotic communities  State designated areas for the protection of maintenance of aquatic life under the Clean Water  Act	tidal waters in which the fish spend extended periods of time	[	
National river reach designated as recreational Habitat known to be used by State designated endangered or threatened species Habitat known to be used by a species under review as to its Federal endangered or threatened status Coastal Barrier (partially developed) Federally designated Scenic or Wild River State land designated for wildlife or game management State designated Scenic or Wild River State designated Natural Area Particular areas, relatively small in size, important to maintenance of unique biotic communities State designated areas for the protection of maintenance of aquatic life under the Clean Water Act	Terrestrial areas utilized by large or dense aggregations of vertebrate animals		
Habitat known to be used by State designated endangered or threatened species Habitat known to be used by a species under review as to its Federal endangered or threatened status Coastal Barrier (partially developed) Federally designated Scenic or Wild River State land designated for wildlife or game management State designated Scenic or Wild River State designated Natural Area Particular areas, relatively small in size, important to maintenance of unique biotic communities State designated areas for the protection of maintenance of aquatic life under the Clean Water Act		1	
Habitat known to be used by a species under review as to its Federal endangered or threatened status  Coastal Barrier (partially developed)  Federally designated Scenic or Wild River  State land designated for wildlife or game management  State designated Scenic or Wild River  State designated Natural Area  Particular areas, relatively small in size, important to maintenance of unique biotic communities  State designated areas for the protection of maintenance of aquatic life under the Clean Water  Act	National river reach designated as recreational		
or threatened status  Coastal Barrier (partially developed)  Federally designated Scenic or Wild River  State land designated for wildlife or game management  State designated Scenic or Wild River  State designated Natural Area  Particular areas, relatively small in size, important to maintenance of unique biotic communities  State designated areas for the protection of maintenance of aquatic life under the Clean Water  Act	Habitat known to be used by State designated endangered or threatened species	50	
Coastal Barrier (partially developed) Federally designated Scenic or Wild River  State land designated for wildlife or game management  State designated Scenic or Wild River  State designated Natural Area  Particular areas, relatively small in size, important to maintenance of unique biotic communities  State designated areas for the protection of maintenance of aquatic life under the Clean Water  5  Act	Habitat known to be used by a species under review as to its Federal endangered		
Federally designated Scenic or Wild River  State land designated for wildlife or game management  State designated Scenic or Wild River  State designated Natural Area  Particular areas, relatively small in size, important to maintenance of unique biotic communities  State designated areas for the protection of maintenance of aquatic life under the Clean Water  5  Act		]	
State land designated for wildlife or game management 25 State designated Scenic or Wild River State designated Natural Area Particular areas, relatively small in size, important to maintenance of unique biotic communities State designated areas for the protection of maintenance of aquatic life under the Clean Water 5 Act	Coastal Barrier (partially developed)	l	
State designated Scenic or Wild River  State designated Natural Area  Particular areas, relatively small in size, important to maintenance of unique biotic communities  State designated areas for the protection of maintenance of aquatic life under the Clean Water  5  Act	Federally designated Scenic or Wild River	ł	
State designated Natural Area  Particular areas, relatively small in size, important to maintenance of unique biotic communities  State designated areas for the protection of maintenance of aquatic life under the Clean Water 5  Act	State land designated for wildlife or game management	25	
Particular areas, relatively small in size, important to maintenance of unique biotic communities  State designated areas for the protection of maintenance of aquatic life under the Clean Water  5  Act	State designated Scenic or Wild River		
State designated areas for the protection of maintenance of aquatic life under the Clean Water 5  Act	State designated Natural Area	ł	
State designated areas for the protection of maintenance of aquatic life under the Clean Water 5  Act	Particular areas, relatively small in size, important to maintenance of unique biotic communities	1	
Act		5	
Wetlands See SI Table 14 (Surface Water Pathway) or SI Table 23 (Air Pathway)	Act	· (	
	Wetlands See SI Table 14 (Surface Water Pathway) or SI Table 23 (Air Pathway)		

## SI TABLE 14 (HRS TABLE 4-24): SURFACE WATER WETLANDS FRONTAGE VALUES

Total Length of Wetlands	Assigned	Value
Less than 0.1 mile	. 0	
0.1 to 1 mile	25	
Greater than 1 to 2 miles	50	·
Greater than 2 to 3 miles	75	
Greater than 3 to 4 miles	100	:
Greater than 4 to 8 miles	150	1
Greater than 8 to 12 miles	250	
Greater than 12 to 16 miles	350	
Greater than 16 to 20 miles	450	
Greater than 20 miles	500	

## SURFACE WATER PATHWAY (concluded) WASTE CHARACTERISTICS, THREAT, AND PATHWAY SCORE SUMMARY

WASTE CHARACT	ERISTICS					S∞re	
14. If an Actual Cont chain, or environ the calculated ha whichever is gre	mental threat) e izardous waste ater.	xists fo quantit	or the wall y score, o	ershi or a s	ed, assign core of 100,		
15. Assign the highes Table 3 (no obser characterization to hazardous waste characteristics soo	ved release) for actors below. Ma quantity score a are for each thre	the hautiply end determined determined determined at the second determi	zardous : each by the ermine th	subst e su	ance waste face water ste	WC Score (fr	
	Substance Valu	•	HWQ		Product	(Maximum of	<del>-1</del> 00}-
Drinking Water Threat Toxicity/Persistence	10,000	x	; 5		12005	8	Mile 7 (8)
Food Chain Threat Toxicity/Persistence Bioaccumulation	54.08	x	10	_	5, 4, 20	140	may , 1000
Environmental Threat Ecotoxicity/Persistence/ Ecobioaccumulation	54006	x	(0	-	52.12	(⊀≎	الدين ۾ 1 (196
Product  0  >0 to <10  10 to <100  100 to <1.00  1,000 to < 10  10,000 to <10  1E + 05 to <1  1E + 06 to <1  1E + 08 to <1  1E + 09 to <1  1E + 10 to <1  1E + 10 to <1  1E + 10 to <1  1E + 10 to <1  1E + 11 to <1  1E + 12 or gr	0,000 E + 05 E + 06 E + 07 E + 08 E + 09 E + 10 E + 11 E + 12		WC Scor 0 1 2 3 6 10 18 32 56 100 180 320 560 1000	Ð	· · · .		-

SURFACE WATER PATHWAY THREAT SCORES

Threat	Likelihood of Release (LR) Score	Targets (T) S∞re	Pathway Waste Characteristics (WC) Score (determined above)	Threat Score  LR x T x WC  82,500
Drinking Water	270	5 h	\ <u>8</u>	(maximum of 100)
Human Food Chain	270	O	180 ·	(maximum of 100)
Environmental	270	0.15	180	(maximum of 60) ここう

SURFACE WATER PATHWAY SCORE (Drinking Water Threat + Human Food Chain Threat + Environmental Threat)

(maximum of 100)

#### SOIL EXPOSURE PATHWAY

If there is no observed contamination (e.g., ground water plume with no known surface source), do not evaluate the soil exposure pathway. Discuss evidence for no soil exposure pathway.

Soll Exposure Resident Population Targets Summary

For each property (duplicate page 35 as necessary):

If there is an area of observed contamination on the property and within 200 feet of a residence, school, or day care center, enter on Table 15 each hazardous substance by sample ID. Record the detected concentration. Obtain cancer risk, and reference dose concentrations from SCDM. Sum the cancer risk and reference dose percentages for the substances listed. If cancer risk or reference dose concentrations are not available for a particular substance, enter N/A for the percentage. If the percentage sum calculated for cancer risk or reference dose equals or exceeds 100%, evaluate the residents and students as Level I. If both percentages are less than 100% or all are N/A, evaluate the targets as Level II.

### SI TABLE 15: SOIL EXPOSURE RESIDENT POPULATION TARGETS

Residence ID:_			Levell	Level	II	Population		
Sample ID	Hazardous Substance	Conc. (mg/kg)	Cancer Risk Concentration	% of Cancer Risk Conc.	RID	% of RID	Toxicity Value	References
			Highest Percent		Sum of Percents		Sum of Percents	
Residence ID:			Level I	Level	11	Population		
Sample ID	Hazardous Substance	Conc. (mg/kg)	Cancer Risk Concentration	% of Cancer Risk Conc.	RID	% of RID	Toxicity Value	References
		<u> </u>	Highest Percent		Sum of Percents		Sum ol Percents	
Residence ID:			Levell	Leve	111	Population		
Sample ID	Hazardous Substance	Conc. (mg/kg)	Cancer Risk Concentration	% of Cancer Risk Conc.	RID	% of RID	Toxicity Value	References
		<u> </u>	Highest Percent		Sum of Percents		Sum of Percents	

## SOIL EXPOSURE PATHWAY WORKSHEET RESIDENT POPULATION THREAT

LIKELIHOOD OF EXPOSURE	Score	Data Type	Rels
<ol> <li>OBSERVED CONTAMINATION: If evidence indicates presence of observed contamination (depth of 2 feet or less), assign a score of 550; otherwise, assign a 0. Note that a likelihood of exposure score of 0 results in a soil exposure pathway score of 0.</li> </ol>	550		-
LE =	550		
2. RESIDENT POPULATION: Determine the number of people living or attending school or day care on a property with an area of observed contamination and whose residence, school, or day care center, respectively, is on or within 200 feet of the area of observed contamination. Level II:	0		
<ol> <li>RESIDENT INDIVIDUAL: Assign a score of 50 if any Level I resident population exists. Assign a score of 45 if there are Level II targets but no Level I targets. If no resident population exists (i.e., no Level I or Level II targets), assign 0 (HRS Section 5.1.3).</li> </ol>	o		
4. WORKERS: Assign a score from the table below for the total number of workers at the site and nearby facilities with areas of observed contamination associated with the site.    Number of Workers	0		
5. TERRESTRIAL SENSITIVE ENVIRONMENTS: Assign a value for each terrestrial sensitive environment (SI Table 16) in an area of observed contamination.  Terrestrial Sensitive Environment Type  Value  Sum =	<i>O</i>		-
6. RESOURCES: Assign a score of 5 if any one or more of the following resources is present on an area of observed contamination at the site; assign 0 if none applies.  Commercial agriculture  Commercial silviculture  Commercial livestock production or commercial livestock grazing	9		
Total of Targets T=	$\dot{\alpha}$		

# SI TABLE 16 (HRS TABLE 5-5): SOIL EXPOSURE PATHWAY TERRESTRIAL SENSITIVE ENVIRONMENT VALUES

Carrie and a some

TERRESTRIAL SENSITIVE ENVIRONMENT	ASSIGNED VALUE
Terrestrial critical habitat for Federal designated endangered or threatened species	100
National Park Designated Federal Wilderness Area National Monument	
Terrestrial habitat known to be used by Federal designated or proposed threatened or endangered species National Preserve (terrestrial) National or State terrestrial Wildlife Refuge Federal land designated for protection of natural ecosystems Administratively proposed Federal Wildemess Area Terrestrial areas utilized by large or dense aggregations of animals (vertebrate species) for breeding	75
Terrestrial habitat used by State designated endangered or threatened species Terrestrial habitat used by species under review for Federal designated endangered or threatened status	50
State lands designated for wildlife or game management State designated Natural Areas Particular areas, relatively small in size, important to maintenance of unique biotic communities	25

## SOIL EXPOSURE PATHWAY WORKSHEET NEARBY POPULATION THREAT

1 11	KELIHOOD OF EXPOSURE		S∞re	Type	Ref.
7.		Value _ <sup>{D</sup>	J		
	Area of Contamination (from SI Table 18 or HRS Table 5-7)	Value			
		of Exposure able 19 or HRS Table 5-8)			
not	i: if there is no area of observed contamination.	LE =	5		
	LE = 0 .				
				O -4-	
TA	RGETS		S∞re	Data Type	Ref.
TA 8.	ASSIGN A SCORE OF 0 If Level I or Level II re evaluated or if no individuals live within 1, an area of observed contamination. Assi population is within 1/4 mile travel distant II resident population has been evaluated	/4 mile travel distance of gn a score of 1 if nearby se and no Level I or Level	Score		Ref.
	Assign a score of 0 if Level I or Level II re evaluated or if no individuals live within 1 an area of observed contamination. Assi population is within 1/4 mile travel distant	/4 mile travel distance of gn a score of 1 if nearby ce and no Level I or Level d.  avel distance that is not the site (i.e., properties evel II); record the  SI Table 20 (HRS Table 5-	S∞re		Ref.

### SI TABLE 17 (HRS TABLE 5-6): ATTRACTIVENESS/ACCESSIBILITY VALUES

Area of Observed Contamination	Assigned Value
Designated recreational area	100
Regularly used for public recreation (for example, vacant lots in urban area)	75
Accessible and unique recreational area (for example, vacant lots in urban area)	75
Moderately accessible (may have some access improvements-for example, gravel road) with some public recreation use	50
Slightly accessible (for example, extremely rural area with no road improvement) with some public recreation use	25
Accessible with no public recreation use	/10
Surrounded by maintained fence or combination of maintained fence and natural barriers	5
Physically inaccessible to public, with no evidence of public recreation use	0

# SI TABLE 18 (HRS TABLE 5-7): AREA OF CONTAMINATION FACTOR VALUES

Total area of the areas of observed contamination (square feet)	Assigned Value
≤ to 5,000	5
> 5,000 to 125,000	20
> 125,000 to 250,000	40
> 250,000 to 375,000	60
> 375,000 to 500,000	80
> 500,000	100

### SI TABLE 19 (HRS TABLE 5-8): NEARBY POPULATION LIKELIHOOD OF EXPOSURE FACTOR VALUES

AREA OF CONTAMINATION	ATTRACTIVENESS/ACCESSIBILITY FACTOR VALUE									
FACTOR VALUE	100	75	50	2 5	10	5	0			
100	500	500	375	250	125	50	0			
8 0	500	375	250	125	50	25	0			
60	375	250	125	50	25	5	0			
40	250	125	50	25	5	5	0			
(20)	125	50	25	5	5	5	0			
5	50	25	5	5	5	5	0			

# SI TABLE 20 (HRS TABLE 5-10): DISTANCE-WEIGHTED POPULATION VALUES FOR NEARBY POPULATION THREAT

Travel Distance	1	Number of people within the travel distance category											j	
Category (miles)	Pop.	0	1 to 10	11 to 30	31 10 100	101 to 300	301 to 1,000	1,001 to 3,000	3,001 to 10,001	10,001 to 30,000	30,001 to 100,000	100,001 to 300,000	300,001 to 1,000,000	Pop Valu
Greater than 0 to $\frac{1}{4}$	58	0	0.1	0.4	1.0	4	13	41	130	408	1,303	4,081	13,034	1
Greater than $\frac{1}{4}$ to $\frac{1}{2}$	135	0	0.05	0.2	0.7	2)	7	20	65	204	652	2,041	6,517	2
Greater than $\frac{1}{2}$ to 1	1067	0	0.02	p. (	0.3	1	3	10>	33	102	326	1,020	3,258	(D

### SOIL EXPOSURE PATHWAY WORKSHEET (concluded)

WASTE CHARACTERISTICS Assign the hazardous waste quantity score calculated for soil exposure HRS Section 5.1.2.2 and HRS Table 5-2. 10 Assign the highest toxicity value from SI Table 16 > 3 ~ 11. for the Soil exposure parkway 10,000 Multiply the toxicity and hazardous waste quantity scores. Assign the 12. Waste Characteristics score from the table below: Product WC Score 0 01> 0 Oc 10 10 < 100 3 100 to <1,000 WC = 18 1,000 to < 10,000 6 10,000 to <1E + 05 10 1E + 05 to <1E + 06 18 1E + 06 to <1E + 07 32 1E + 07 to <1E + 08 56 1E + 08 or greater RESIDENT POPULATION THREAT SCORE: (5/2) (0) (18) LEXIX WC (Likelihood of Exposure, Question 1; Targets = Sum of Questions 2, 3, 4, 5, 6) . -82,500-NEARBY POPULATION THREAT SCORE: (5)(2.3)(16) (Likelihood of Exposure, Question 7; LEXTX WC -82,500-Targets = Sum of Questions 8, 9) SOIL EXPOSURE PATHWAY SCORE: Resident Population Threat + Nearby Population Threat 1/82,500 (Maximum of 100)

#### AIR PATHWAY

#### Air Pathway Observed Substances Summary Table

On SI Table 21, list the hazardous substances detected in air samples of a release from the site. Include only those substances with concentrations significantly greater than background levels. Obtain benchmark, cancer risk, and reference dose concentrations from SCDM. For NAAQS/NESHAPS benchmarks, determine the highest percentage of benchmark obtained for any substance. For cancer risk and reference dose, sum the percentages for the substances listed. If benchmark, cancer risk, or reference dose concentrations are not available for a particular substance, enter N/A for the percentage. If the highest benchmark percentage or the percentage sum calculated for cancer risk or reference dose equals or exceeds 100%, evaluate targets in the distance category from which the sample was taken and any closer distance categories as Level 1. If the percentages are less than 100% or all are N/A, evaluate targets in that distance category and any closer distance categories that are not Level 1 as Level 11.

# SI TABLE 21: AIR PATHWAY OBSERVED RELEASE SUBSTANCES

			Lev	/ellLo	vel II	Distance from So	ources (ml)	References	
	Sample ID:	Conc. (µg/m³)	Gaseous Particulate	Benchmark Conc. (NAAOS or NESHAPS)	% of Benchmark	Cancer Risk Conc.	% of Cancer Risk Conc.	RID	% of RID
		Highest Toxicity/ Mobility		Highest Percent		Sum of Percents		Sum of Percents	
			Le	evel I		Distance from S	Sources (mi)	References	
	Sample ID:	Сопс. (µg/m³)	Toxicity/ Mobility	Benchmark Conc. (NAAQS or NESHAPS)	% of Benchmark	Cancer Risk Conc.	% of Cancer Risk Conc.	RID	% of RID
3									
		Highest Toxicity/		Highest Percent		Sum of Percents	·	Sum of Percents	
	-	•		Level I	Level II	Distance from	Sources (mi)	_ References_	
	Sample ID:		Toxicity/	Benchmark Conc. (NAAQS or NESHAPS)		Cancer Risk	% of Cancer Risk Conc.	RID	% of RID
		Highest Toxicit Mobili	y/	Highest Percent		Sum of Percents		Sum of Percents	

### AIR PATHWAY WORKSHEET

LIKELIHOOD OF RELEASE	S∞re	Data Type	Refs
OBSERVED RELEASE: If sampling data or direct observation	30010	J	1,613
support a release to air, assign a score of 550. Record observed		·	•
release substances on SI Table 21.		<u> </u>	
2. POTENTIAL TO RELEASE: If sampling data do not support a	*		
release to air, assign a score of 500. Optionally, evaluate air	500	1 1	
migration gaseous and particulate potential to release (HRS	1	1 1	
Section 6.1.2).	<del>_</del>	<del> </del>	
LD	500	1	
LR:	= <u></u>	J.	
TARGETS  3. ACTUAL CONTAMINATION POPULATION: Determine the number	·		
of people within the target distance limit subject to exposure from a			
release of a hazardous substance to the air.	` I		]
Totale of a flat allowed substance to the air.	]		1
a) Level I: people x 10 =			{
a) Level I: people x 10 = b) Level II: people x 1 = Total =	:[	[	{
4. POTENTIAL TARGET POPULATION: Determine the number of			
people within the target distance limit not subject to exposure from		- 1	
a release of a hazardous substance to the air, and assign the total	1		ł
population score from SI Table 22. Sum the values and multiply the		1	1
sum by 0.1.	<del> </del>	}-	
<ol> <li>NEAREST INDIVIDUAL: Assign a score of 50 if there are any Level I targets. Assign a score of 45 if there are Level II targets but no</li> </ol>			
Level I targets. If no Actual Contamination Population exists, assign	.] ' ]		1
the Nearest Individual score from SI Table 22.		1	ļ
6. ACTUAL CONTAMINATION SENSITIVE ENVIRONMENTS: Sum	<del> </del>		
the sensitive environment values (SI Table 13) and wetland	[		ĺ
acreage values (SI Table 23) for environments subject to exposure		İ	ľ
from the release of a hazardous substance to the air.	1	1	1
	1		1
Sensitive Environment Type Value		1	}
	1	1	- {
	1	1	. 1
		1	
Wetland Acreage Value			
	1	1	
	1	[	
	[	1	
	1	İ	į
7. POTENTIAL CONTAMINATION SENSITIVE ENVIRONMENTS:			$\neg \neg$
Use SI Table 24 to evaluate sensitive environments not subject to		- {	1
exposure from a release.			
8. RESOURCES: Assign a score of 5 if one or more air resources			
apply within 1/2 mile of a source; assign a 0 if none applies.		}	1
Commercial agriculture		ļ	)
Commercial silviculture	j		1
Major or designated recreation area	<del> </del>	<del></del>	
A sweet 500 was assigned due to the T=	18.87	- 1	
A sweet 500 was assigned due to en T=			
I I AT F MANITIME TAMBLES			

## SI TABLE 22 (From HRS TABLE 6-17): VALUES FOR POTENTIAL CONTAMINATION AIR TARGET POPULATIONS

Γ					Number of People within the Distance Category											
	Distance from Site	Рор.	Nearest Individual (choose highest)	1 to 10	11 to 30	31 10 100	101 to 300	301 to 1,000	1,001 to 3,000	3,001 10 10,000	10,001 10 30,000	30,001 to 100,000	100,001 10 300,000	300,001 10 1,000,000	1,000,000 lo 3,000,000	Pop. Value
	On a source	ð	20	4	17	53	164	522	1,633	5,214	16,325	52,137	163,246	521,360	1,632,455	
	0 to $\frac{1}{4}$ mile		٠.	1	4	137	41	131	408	1,304	4,081	13,034	40,812	130,340	408,114	
	> \frac{1}{4} to \frac{1}{2}		2	0.2	0.9	3	9/	28	88	282	882	2,815	8,815	28,153	88,153	.)
	> ½ to 1		1	0.06	J.3,	0.9	3	8	26	83	261	834	2,612	8,342	26,119	24
	> 1 to 2 miles	2254	0	0.02	0.09	0.3	0.8	3	8	27	83	266	833	2,659	8,326	8
	> 2 to 3 miles	5001	0	0,009	0.04	0.1	0,4	1	4	12	38	120	375	1,199	3,755	12.
	>3 to 4 miles	928	0 .	0.005	0,02	0.07.	0.2	(0.7)	2	7	28	73	229	730	2,285	0.7
L		Nearest dividual =	7		·\$	<del></del>	<del></del>	<del></del>	<del></del>	· · · · · · · · · · · · · · · · · · ·	<u>*</u>		· Lo	<del></del>	Sum =	280

<sup>\*</sup> Score = 20 If the Nearest Individual is within  $\frac{1}{8}$  mile of a source; score = 7 if the Nearest Individual is between  $\frac{1}{8}$  and  $\frac{1}{4}$  mile of a source.

### SI TABLE 23 (HRS TABLE 6-18): AIR PATHWAY VALUES FOR WETLAND AREA

Welland Area	Assigned Value
< 1 acre	0
1 to 50 acres	25
> 50 to 100 acres	75
> 100 to 150 acres	125
> 150 to 200 acres	175
> 200 to 300 acres	250
> 300 to 400 acres	350
> 400 to 500 acres	450
> 500 acres	500

# SI TABLE 24: DISTANCE WEIGHTS AND CALCULATIONS FOR AIR PATHWAY POTENTIAL CONTAMINATION SENSITIVE ENVIRONMENTS

Distance	Distance Weight	Sensitive Environment Type and Value (from Si Tables 13 and 26) 23	Product
On a Source	0.10	X	
		x	
0 to 1/4 mile	0.025	x	
		x	
,		x	
1/4 to 1/2 mile	0.0054	x	
ľ		x	
!		x	
1/2 to 1 mile	0.0016	x	
		x	
		x	
1 to 2 miles	0.0005	x	
		×	
		x	
2 to 3 miles	0.00023	x	
		x	
		x	
3 to 4 miles	0.00014	x	
		x	
		x	
> 4 miles	0	x	

Total Environments Score =

### AIR PATHWAY (concluded)

WASTE CHARACTERISTICS

mummm size Yequiving the highest air toxicity/reliably the air pathway toxicity natity scores. Assign the Wi	nobility value from SI Ta /mobility and hazardous	Table 21.	
ntity scores. Assign the Wi			
e below:	WC Score		
Product	WC Sare	wc = 14	
>0 to <10		1	
10 to <100	2		
100 to <1,000	2 3	1	
1,000 to < 10,000	6	1	
10,000 to <1E + 05	10	1	
1E + 05 to <1E + 06			
		ſ	
1E + 06 to <1E + 07	56		
	1E + 05 to <1E + 06	1E + 05 to <1E + 06 1E + 06 to <1E + 07 1E + 07 to <1E + 08 18 32 56	1E + 05 to <1E + 06 1E + 06 to <1E + 07

AIR PATHWAY SCORE:

-LE x T x WC 82,500

2.06 (maximum of 100)

SITE SCORE CALCULATION	S	S <sup>2</sup>
GROUND WATER PATHWAY SCORE (SGW)	14.29	204.2
SURFACE WATER PATHWAY SCORE (Saw)	0,69	0.476
SOIL EXPOSURE (Ss)	. 0.003	0.00009
AIR PATHWAY SCORE (SA)	2.06	4.24
SITE SCORE $\sqrt{\frac{S_{GW}^2 + S_{SW}^2 + S_{S}^2 + S_{A}^2}{4}}$	=	7,23

The to low target values and a low overall site score, no farther action is recommended at the site.

COMMENTS

<u>,</u>	PΔ	

## POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT

I. DENT	IFICATION	
CISTATE	02 SITE NUMBER	
	<u> MC 1 /</u>	_ :4/_

PART 1	- SITE INFORMA			IT S	<u>, MC (1 / 14/2</u>			
II. SITE NAME AND LOCATION								
01 SITE NAME (Legar common or descriptive name of site)		02 STREET, ROUTE NO OR SPECIFIC LOCATION IDENTIFIER						
La contract de de de la contraction de la contra	_	1 1 2 27 28 / 2001 1 1 1 1 1 1 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1						
DECITY					07 CCUNTY 08 CONG CCDE CAST			
G9 COGRDINATES LATITUDE LONG		TM	377774	Transfer,	105 02			
09 COGROINATES LATITUDE LONG	GITUDE							
	:							
10 CIRECTIONS TO SITE Islaming from nearest public road.								
III. RESPONSIBLE PARTIES								
O1 OWNER If known!		02 STREE	T :Business, making reside	entriar)				
03 CTY		Q4 STATE	05 ZIP CODE	OG TELEPHONE NUMBER				
;				( )				
O7 OPERATOR (if known and different from owner)	<del></del>	OB STREE	T (Business, mailing, reside	Privati				
09 CITY		10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER				
				1				
13 TYPE OF OWNERSHIP (Check one)	·· <del>···········</del>	<u></u>		<del>\</del>	<u> </u>			
☑ A, PRIVATE ☐ B, FEDERAL.	(Agency name)		_ C. STATE	ID.COUNTY I E. ME	INICIPAL			
☐ F OTHER:(Soecry			_ E G. UNKNOV	YN .				
1.4 OWNER/OPERATOR NOTIFICATION ON FILE (Check at that apply)								
C A. RCRA 3001 DATE RECEIVED:	☐ 8. UNCONTROLL	ED WAST	E SITE :CERCLA 103 cr	DATE RECEIVED	BYON D E			
IV. CHARACTERIZATION OF POTENTIAL HAZARD	· · · · · · · · · · · · · · · · · · ·			<b>40</b> 0 7 3	241 1540			
	CK sil (mai sopry)			_				
U TES DATE - DE L	PA 🔲 8, EPA OCAL HEALTH OFFI	CONTRA	CTOR IC.	STATE COOTHER	CONTRACTOR			
D 140				Specify				
G2 SITE STATUS (Check one)	RACTOR NAME(S): _							
E ALACTIVE E B INACTIVE E C. UNKNOWN				I UNKNOW	'N			
04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN,	OR ALLEGED	EGINNING YE						
1 Charles of the Char	·	$(v_0)$	5/11/5	"Last Com The	Survey All			
			·					
to the property of the second								
CS DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/	OR POPULATION							
V. PRIORITY ASSESSMENT								
01 PRIORITY FOR INSPECTION (Check one. # high or measure at checked, ci	omprete Part 2 - Waste Infor	neison and Pa	T 3 - Description of Hazard	ous Conditions and Incidents:				
☐ A. HIGH ☐ B. MEDIUM	C. LOW		O D. NONE					
(Inspection required promptly) (Inspection required)	(Instruction time	everative been		action needed, complete current dispo	adion form)			
(Inspection required promotity) (Inspection required) VI. INFORMATION AVAILABLE FROM	(Inspection ame			вспол неваед, сотрівтв сителі дагро				
(Inspection required promptly) (Inspection required)				action heeded. Complete current despo	03 TELEPHONE NUMBER			
VI. INFORMATION AVAILABLE FROM  D1 CONTACT	02 OF (Agency: Organus	e front	) (No lumer .		03 TELEPHONE NUMBER			
(Inspection required promotity) (Inspection required) VI. INFORMATION AVAILABLE FROM	(Inspection ame	e front		07 TELEPHONE NUMBER	03 TELEPHONE NUMBER			

SEDA

## POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT

NOUGH CANDER SISTANDINGS TENDMESH

ACI				EINFORMATIO		TA THO	991279744
II. WASTES	TATES, QUANTITIES, A	ND CHARACTE		<del></del>			·
01 PHYSICAL S	TATES (Check of that apply)	02 WASTE QUAN		03 WASTE CHARAC	TERISTICS (CARCA MICHAEL	1 BODITI	
□ A SOUD	□ E SLUPRY		s of waste quantities of independent:	Ц а тохю	I E SOL	JBLE ITHIGHLY	¥O∪A FILE
I B POWDE	R FINES C F LIQUID	TONS		E B CORRI	OSIVE E FINFE		S.VE IVE
		CUBIC YARDS		C D PERSO			PATBLE
_ D OTHER	(Soechy)	NO. OF DRUMS				2 / //3///	- Canaca
III. WASTE T	YPE	<u> </u>		<del></del>			
CATEGORY	SUBSTANCE N	IAME	01 GROSS AMOUNT	02 UNIT OF MEASUR	EL OJ COMMENTS		· · · · · · · · · · · · · · · · · · ·
SLU	SLUDGE						
OLW	OILY WASTE						
SOL	SOLVENTS						
PSD	PESTICIDES						
occ	OTHER ORGANIC CI	HEM!CALS			<del> </del>		
юс	INORGANIC CHEMIC	CALS	+				
ACD	ACIDS	:	(				
BAS	BASES		<del>-  </del>		<del> </del>		
MES	HEAVY METALS			ļ	<del></del>		
	OUS SUBSTANCES SAA	Annante by most frame	nety cana CAS hymothada	l	<u> </u>		
D1 CATEGORY			03 CAS NUMBER	04 STORAGE/OIS	SPCSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
			-			1	CONCENTRATION
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CATEGORY	CKS (See Appendix for CAS Numb	<del></del>	02 CAS NUMBER	CATEGORY	O1 EEEDS:	TOCK NAME	02 CAS NUMBER
	017623100	A NAME	UZ CAS NUMBER		UTFEEDS	OCK NAME	- CZ CAS AUMBER
FOS				FOS			
FDS				FDS	·		
FDS				FOS			
FDS			<u> </u>	FDS			
VI. SOURCES	S OF INFORMATION (4)	specific references, a g	, State Hes, sample analysis.	resorts (			
Par	t A applica	nute.					

C.EPA

#### POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT

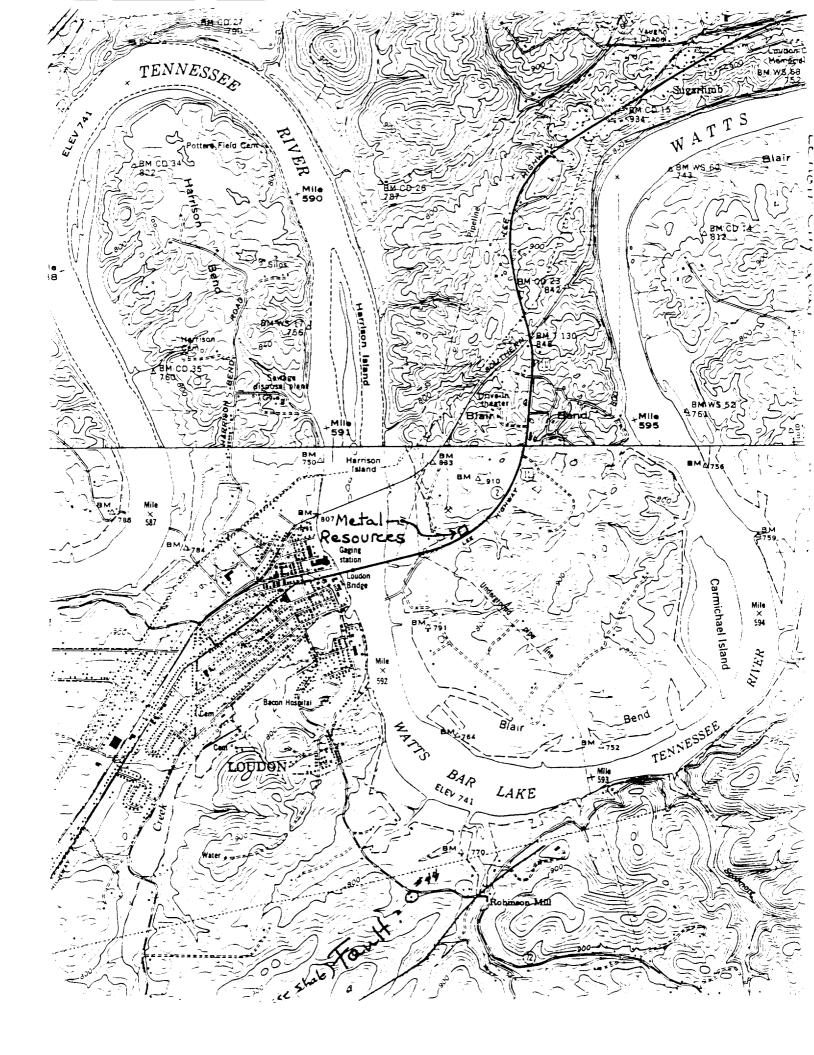
1-1.	IDENT	TEICATION	
		32 SITE NUMBER TAUTO 99127	7-146

	OF HAZARDOUS CONDITIONS AND INC	IDENTS TA	700991277146
II. HAZARDOUS CONDITIONS AND INCIDENTS			
31 _ A GROUNDWATER CONTAMINATION 03 POPULATION POTENTIALLY AFFECTED:	02 DOBSERVED (DATE	☐ POTENTAL	T ALLEGED
01 DB SURFACE WATER CONTAMINATION 03 POPULATION POTENTIALLY AFFECTED	02 TOBSERVED (DATE)  04 NARRATIVE DESCRIPTION	) POTENTIAL	□ ALLEGED
31 II C CONTAMINATION OF AIR 03 POPULATION POTENTIALLY AFFECTED.	02 - OBSERVEDIDATE04 NARRATIVE DESCRIPTION	L) I POTENTAL	□ ALLEGED
01 T.D. FIRE/EXPLOSIVE CONDITIONS 03 POPULATION POTENTIALLY AFFECTED:	02  OBSERVED (DATE:	) ☐ POTENTIAL	□ ALLEGED
01 T.E. DIRECT CONTACT C3 POPULATION POTENTIALLY AFFECTED	02 TOBSERVED (DATE	_) □ POTENTIAL	I ALLEGED
01 I F CONTAMINATION OF SCIL 03 AREA POTENTIALLY AFFECTED:	02 C OBSERVED (DATE. 04 NARRATIVE DESCRIPTION	L) E POTENTAL	□ ALLEGED
01 = G DRINKING WATER CONTAMINATION 03 POPULATION POTENTIALLY AFFECTED	02 TOBSERVED (DATE	_) I POTENTIAL	I ALLEGED
31 Z H WORKER EXPOSURE/INJURY 33 WORKERS POTENTIALLY AFFECTED.	02 C OBSERVED (DATE	_) I POTENTAL	I ALLEGED
CT TI POPULATION EXPOSURE/INJURY CO POPULATION POTENTIALLY AFFECTED:	02 □ OBSERVED (DATE	L) C POTENTIAL	C ALLEGED
•			

### POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT

I. IDENTIFICATION

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS II. HAZARDOUS CONDITIONS AND INCIDENTS (CONTINUED) 01 DJ. DAMAGE TO FLORA C POTENTIAL C ALLEGED 02 C OBSERVED (DATE: \_\_\_\_\_) 04 NARRATIVE DESCRIPTION 01 @ K DAMAGE TO FAUNA 02 G OBSERVED (DATE. \_\_\_\_\_\_) I POTENTIAL ☐ ALLEGED 04 NARRATIVE DESCRIPTION (Include name(s) of species: 02 C OBSERVED (DATE. I ALLEGED 01 C L CONTAMINATION OF FOOD CHAIN E POTENTIAL 04 NARRATIVE DESCRIPTION 01 T M UNSTABLE CONTAINMENT OF WASTES 02 C OBSERVED (DATE. C POTENTIAL ☐ ALLEGED (Sollis/runo/Ustanding aguids/leaking drums) 03 POPULATION POTENTIALLY AFFECTED:\_\_\_ 04 NARRATIVE DESCRIPTION 01 C N DAMAGE TO OFFSITE PROPERTY 02 COBSERVED (DATE: \_\_\_\_\_) C POTENTIAL C ALLEGED 04 NARRATIVE DESCRIPTION ☐ POTENTIAL C ALLEGED 01 TI OL CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs 102 TI OBSERVED (DATE, \_\_\_\_\_\_) 04 NARRATIVE DESCRIPTION 01 - P ILLEGAL/UNAUTHORIZED DUMPING I POTENTIAL 02 (DATE. \_\_\_\_\_) ☐ ALLEGED 04 NARRATIVE DESCRIPTION OS DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS III. TOTAL POPULATION POTENTIALLY AFFECTED: IV. COMMENTS V. SOURCES OF INFORMATION (Cre appearing references), et al., state free sample analysis, reports)



Metal Resources

-Talked to Marty Hertzel

- Knoxville DSWM at site in August 83 - No hazardous waste

- Directions

From Knoxville: I40-75 west

Take 7.5 south

Exit on Sugar Lem Road

Froceed East till road deaderds into U.S. 11

Head towards Loudon, go - I mile to small business area

Site is a white building (old cardealership)

Texaco across street

If you cross a bridge in the business area you've gone too far

#### TENNESSEE DEPARTMENT OF HEALTH AND ENVIRONMENT

#### OFFICE CORRESPONDENCE

DATE:

June 14, 1984

Reference 2

TO:

THE FILES

FROM:

Kenneth R. Davis

SUBJECT: 83012 Program - Site Investigations Metal Resources, Incorporated

### METAL RESOURCES, INCORPORATED

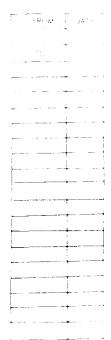
Or June 3, 1984, Metal Resources, Incorporated of Loudon, Tennessee was visited by Karen Bonner and Ken Davis. Mr. Marty Hertzel, President of Metal Resources, was contacted prior to the inspection in order to obtain permission to enter the site. During the visit we met with Mrs. Pat Hertzel, Secretary, Mr. Freeman Russel, Plant Supervisor, and Mr.Luther James, Shift Supervisor.

Metal Resources refines scrap aluminum. Or-site operations did not begin until 1981. Before Metal Resources' refinery was built, the land was undeveloped farm and forest land.

Because of the relatively recent start cate of Metal Resources end the lack of a past history of development, this site does not fall under the regulation of the §3012 Program). No attempt was made to inspect the refinery or the surrounding grounds.

Based on this inspection, it is felt that NO FURTHER ACTION is redurined under the §3012 Program.

KRD/tad



#### POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 1 - SITE LOCATION AND INSPECTION INFORMATION

		IFICATION	
ı	O1 STATE	02 SITE NUMBER	
	TN	109912797	40

II. SITE NAME AND LOCATION				
01 SITE NAME Livyer common indeption of the name of times	,		SPECIFIC LOCATION IDENTIFIER	. /
Metal Resources, Inc	corporated	Blain Bend	Industrial Par	大/U.S. 11 107COUNTY 28 CONG
Loudon	·		Loudon	COOE DIST
35 44 40.6 CELLA 26.0	10 TYPE OF OWNERSHI	P (Check one)	I C. STATE II D. COUNTY	TE MUNICIPAL
III. INSPECTION INFORMATION				
OF DATE OF INSPECTION   D2 SITE STATUS   ACTIVE   INACTIVE	03 YEARS OF OPERATI	on 98/1 -	UNKNOWN	
TINACTIVE  104 AGENCI PERFORMING INSPECTION STEEK AN INSTAUDITY.	BEGIN	NING YEAR ENDING Y	EAR	
DIA EPA DIBLEPA CONTRACTOR		T C MUNICIPAL T D	. MUNICIPAL CONTRACTOR	
X E STATE THE STATE CONTRACTOR	Name of Irmi	I G OTHER		Name of firm)
OS CHIEF INSPECTOR	Name of firms 06 TITLE		Specifyi 07 ORGANIZATION :	08 TELEPHONE NO.
KenLavis	_	ologist I	Tenn Dept. Health+Environ	1/ 1/7/11-1-087
09 OTHER INSPECTORS	10111100	•	11 ORGANIZATION TELLY LEST	12 TELEPHONE NO
Karen Benner	<u>Che</u>	mist I	Hall - Envire	16151741-6287
				( )
				( )
,		·		( )
•				( )
13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE Plaint	15ACCRESS		16 TELEPHONE NO
Pros Access to the	Sep. 15	cal Artic	1 Respectives	K.1514=8-267
Nr. Litier Suite	Supervis	1 .	1 Resource	(215)456 3000
Mrs Part Fritze	Secretai	Weda	1 Rosaurces	16.151428-2007
		/		( )
				( )
				( )
				1
17 ACCESS GAINED BY 18 TIME OF INSPECTION	19 WEATHER CONDIT	ions		
X PERMISSION  T WARRANT  L CC / CC /	~90°,5	unny, Nie W	ind Present	
IV. INFORMATION AVAILABLE FROM		<del>-</del>		
01 CONTACT	02 OF Agency Organization			03 TELEPHONE NO
Mr Marty Hertzel	Metal 05 AGENCY	RESCURCES;	Inc.	16151458-2007
Kenneth R. Stavis			(15)741-6287	MONTH DAY FEAR
EPA FORM 2070 13 (7-31)	* * × × ×		and the second second	

## POTENTIAL HAZARDOUS WASTE SITE

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, -	) T 4	-E		: 1E	LMBEA	
- 0						

SE	PA			TION REPORT		STATE OF STA	
H. WASTES	TATES, QUANTITIES, A	ND CHARACTE	RISTICS	<del></del>	·· <del>···································</del>	<del></del>	
L	TATES CHARLES SEL	32 WASTE QUAN		D3 WASTE CHARAC	CTERISTICS (Test is fair	190	
. 4 3000	5 3_JARY		s of waste quantities beindepengent	, A TOXIO		iBLE HIGHLY	ZOLATICE
3 PO MOE 0 355506	RIFINES FILIDIO	TONS		9500 B 3048 C	ROSIVE FINFER DAGTILE _ 3 FLAN	CTIQUS LIEKPLO IMABLE KIREACI	
		CUBIC FARDS			ISTENT 4 GNIT	ABLE L NCOM	PATBUE PRUCABUE
D )T⊣E⊞	So€ .	- NO OF SHUMS					
III. WASTE T	YPE						
CATEGORY	3UBSTANCE 1	IAME	D1 GACSS AMOUNT	C2 UNIT OF MEASUR	RELICIS COMMENTS		
5J	3LUCGE						
OLW	OILY MASTE						
30c	SOLVENTS						
₽SD	PEST C.CES						<del></del>
000	OTHER ORGANIC C	HEMICALS					
ICC .	NORGANIC SHEMIC	DALS		<u> </u>			
COA	ACICS		1				
BAS	BASES						
MES	HEAVY METALS						
IV. HAZARDO	OUS SUBSTANCES S	apendix for most "feque	ntly sited CAS Numbers,	•			
D1 CATEGORY !	DZ SUBSTANCE N	IAME	03 CAS NUMBER	04 STORAGE DI	SPOSAL METHOD	05 CONCENTRATION	D6 MEASURE OF CONCENTRATION
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				L		<u> </u>	<u> </u>
V. FEEDSTO	CKS See Appendix to CAS Numb	MII					<del>_</del>
CATEGORY	01 FEEDSTOC	K NAME	02 CAS NUMBER	CATEGORY	01 FEEDST	OCK NAME	J2 CAS NUMBER
FDS			ļ	FDS			
FDS				FDS			
FDS				FDS			
FDS				FOS			·
VI. SOURCES	OF INFORMATION Six	specific references, e.g	State files sample analysis :	900/13/			

#### POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

. DENTIFICATION DI STATE DE SITE NUMBER

HAZARDOUS CONDITIONS AND INCIDENTS			
IT A GROUNDWATER CONTAMINATION  13 POPULATION POTENTIALLY AFFECTED	02 I OBSERVED DATE 04 NARRATIVE DESCRIPTION	_ POTENTIAL	I ALLEGED
1 II B. SURFACE WATER CONTAMINATION 3 POPULATION POTENTIALLY AFFECTED	02 TOBSERVED (CATE	? POTENTIAL	I ALLEGED
TO CONTAMINATION OF AIR  3 POPULATION POTENTIALLY AFFECTED	02 I OBSERVED:DATE. 04 NARRATIVE DESCRIPTION		I ALLEGED
D. FIRE EXPLOSIVE CONDITIONS POPULATION POTENTIALLY AFFECTED.	02 TOBSERVED (DATE) 04 NARRATIVE DESCRIPTION	) POTENTIAL	_ ALLEGED
T E. DIRECT CONTACT  3 POPULATION POTENTIALLY AFFECTED.	02 T OBSERVED IDATE	Z POTENTIAL	I ALLEGED
T F CONTAMINATION OF SOIL  AREA POTENTIALLY AFFECTED  ACCESS:	02 I OBSERVED (DATE) 04 NARRATIVE DESCRIPTION	_ POTENTIAL	I ALLEGED
I G. DRINKING WATER CONTAMINATION POPULATION POTENTIALLY AFFECTED	02 I OBSERVED (DATE. 04 NARRATIVE DESCRIPTION	POTENTIAL	I ALLEGED
TH. WORKER EXPOSURE INJURY WORKERS POTENTIALLY AFFECTED:	02 T OBSERVED (DATE	_; ☐ POTENTIAL	I ALLEGED
	02 C OBSERVED (DATE: 04 NARRATIVE DESCRIPTION	! POTENTIAL	I ALLEGED
11 T. POPULATION EXPOSURE INJURY 13 POPULATION POTENTIALLY AFFECTED.	04 NARRATIVE DESCRIPTION	!POTENTIAL	Z ALLEG

## POTENTIAL HAZARDOUS WASTE SITE

I. IDENT	TIFICATION	
O'STATE	CZ SITE NUMBER	٠, ,

SEPA SITE INS	OF STATE CO. SITE NUMBER		
II. HAZARDOUS CONDITIONS AND INCIDENTS (1997-1982)			
O1 I J DAMAGE TO FLORA D4 NARRATIVE DESCRIPTION	02 I OBSERVED DATE	_ POTENTIAL	] ACLEGED
01 II K DAMAGE TO FAUNA 04 NARRATIVE DESCRIPTION include namero prispecies	02 I OBSERVED IDATE	_ POTENTIAL	I ALLEGED
31 E L. CONTAMINATION OF FOOD CHAIN 34 NARRATIVE DESCRIPTION	02 I OBSERVED DATE	I POTENTIAL	I ALLEGED
01 TM UNSTABLE CONTAINMENT OF WASTES  Souls Punor Standing rouds Leasing drums:  03 POPULATION POTENTIALLY AFFECTED:	02 T OBSERVED (DATE) 04 NARRATIVE DESCRIPTION	_ POTENTIAL	I ALLEGED
01 TIN DAMAGE TO OFFSITE PROPERTY 04 NARRATIVE DESCRIPTION	02 TOBSERVEDIDATE	_ POTENTIAL	T ALLEGED
01 TO CONTAMINATION OF SEWERS STORM DRAINS, WWTPs 34 NARRATIVE DESCRIPTION	02 I OBSERVED (DATE:	I POTENTAL	I ALLEGED
01 I P ILLEGAL UNAUTHORIZED DUMPING 34 NARRATIVE DESCRIPTION	02 _ OBSERVED  DATE	_ POTENTIAL	I ALLEGED
05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEC	GED HAZAROS		
III. TOTAL POPULATION POTENTIALLY AFFECTED:			
V. SOURCES OF INFORMATION Cite specific references, e.g., state need to	Lamore analysis (eports)		
		, , , , , , , , , , , , , , , , , , ,	

### POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION

LIDENT	TEICATION
O1 STATE	D2 SITE NUMBER
- J.	r ⊆ar 7979

<b>7</b> 217	PART 4 - PERM	IT AND DE	SCRIPTIVE INFORMAT	ION	<u> </u>
IL PERMIT INFORMATION					
OI TYPE OF PERMIT ISSUED	02 PERMIT NUMBER	C3 CATE S	SSUED   04 EXPIRATION DATE	105 COMMENTS	
Check ak rhar accivi					
TA NPOES				<u> </u>	
I B. UIC					
IC. AIR					
I D RCRA					
TE RORA INTERIM STATUS					
TE SPOC PLAN					
IG STATE Salery					
I H LOGAL <sub>Do≠criv</sub> .					
I OTHER Specie.					
IJ NONE					
III. SITE DESCRIPTION				<u> </u>	
01 STORAGE: DISPOSAL Check all Inat apply)	02 AMOUNT 03 UNIT	OF MEASURE	04 TREATMENT, Check at that a	IDD/Y;	05 OTHER
_ A SURFACE:MPOUNDMENT _			A INCENERATION		
I B. PILES			☐ B. UNDERGROUND INJ	ECTION	A. BUILDINGS ON SITE
C. DRUMS, ABOVE GROUND			I C. CHEMICAL PHYSICA		
_ D TANK, ABOVE GROUND _			I D. BIOLOGICAL		
I E. TANK, BELOW GROUND _			E. WASTE OIL PROCES		38 AREA OF SITE
I F LANDFILL I G. LANDFARM			I F SOLVENT RECOVER		
I H. OPEN DUMP			☐ G. OTHER RECYCLING/	RECOVERY	(Ac/95,
I LOTHER			Soe	ic.tv	
Special Specia					
IV. CONTAINMENT OF CONTAINMENT OF WASTES Chack poor					
1 A ADEQUATE, SECURE	I B MODEFATE	- C IN	ADEQUATE, POCR	= 5 NSECT	RE UNSOUND DANGEROUS
_ A ROBGONTE, SECONE	_ B -VIOSE-ATE	_ C. 1141	ADEGOATE, FOCH		———————————
02 CESCRIPTION OF DRUMS DIKING LINERS &	ARRIERS ETC				
V. ACCESSIBILITY					
01 WASTE EASILY ACCESSIBLE TYES 02 COMMENTS	5 I NO			,	
VI. SOURCES OF INFORMATION IC 18 50	ecific references, e.g. state filen, same	ole anarysis, 1800/1	73)		
	· · · · · · · · · · · · · · · · · · ·				
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### POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

I. IDENTIFICATION

AELY	PART 5 - WATER, DEMO	GRAPHIC, AND	ENVIRONMENTAL:	DATA	N3 11- 441 - 14	<u> </u>
VI. ENVIRONMENTAL INFORM						
DI PERMEABILITY OF UNSATURATED.	ZONE Creux strev					
Ξ A 10-3 - 10	=3 cm/sec = 2 3 ±0=4 + 10=5 cm	-sec	− 10° cm sec	GREATER THAN	(C = i cm sec	
32 PERMEABILITY OF BEDROCK Creck	one:					
	MEABLE J B RELATIVELY IMP 1077 cm sec. 1074 - 1079 cm se	ERMEABLE I C	RELATIVELY PERMEABL		PERMEABLE nan 15 Tillim sac	
03 СЕРТН ТО ВЕДПОСК	04 DEPTH OF JONTAMINATED SOIL Z	ONE	05 SOIL pM			
(ft)		(ff)				
06 NET PRECIPITATION	OT ONE YEAR 2" HOUR RAINFALL	OB SLOPE		DE SITE SLIDEE	TERRAIN AVERAGE	SLOPE
(in)	(1	)		3. 3.7.2 3.23 . 2		
09 FLOCO POTENTIAL	1:3					
SITE IS IN YEAR FLO	DODPLAIN E SITE IS C	ON BARRIER ISLANC	D. COASTAL HIGH HAZAF	RD AREA RIVERI	NE FLOODWAY	
11 DISTANCE TO WETLANDS IS acre more	numr	12 DISTAN	ICE TO CRITICAL HABITAT .0	or endangered species.	· · · · · · · · · · · · · · · · · · ·	
ESTUARINE	OTHER		-		. (mi)	
A(mi)	B(mi)	Et	NDANGERED SPECIES			_
13 LAND USE IN VICINITY						
DISTANCE TO						
COMMERCIAL INDUSTR	RIAL RESIDENTIAL AREA:	S. NATIONAL STATE R WILDLIFE RESERV	EPARKS. ES PRIME	AGRICULTUS E AG LAND	RAL LANDS AG LAND	
, A(mi)	8	(mi)	C	(mi)	s	(mi)
14 DESCRIPTION OF SITE IN RELATION	TO SURROUNDING TOPOGRAPHY					
VII. SOURCES OF INFORMATIO	N. Gre specific references, e.g., state files, samo	Die analysis, (econs)				

<b>SEPA</b>		POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA				_		TIFICATION	7
II. DRINKING WATER	RSUPPLY	<del>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</del>					<del></del>		
01 TYPE OF ORINKING SU	PDLY		02 STATUS				33 D	STANCE TO SITE	
Сћеси аз <u>арр</u> исарјет	SURFACE	WELL	ENDANGER	ED AFFE	CTED	MONITORED	İ		
COMMUNITY	A J	8. I	A. =		=	c. <u>=</u>	A _	(mi)	
NON-COMMUNITY	_ c =	D. I	0. 🗆		=	F I	3	(mi)	
III. GROUNDWATER									
C1 GROUNDWATER USE IN		I B DRINKING Other sources availab	DUSTRIAL RRIGATIO	=	OMMERCIAI mred oiner soi	_ NOUSTRIAL, IRRIG vices evamadiei	ation I	O NOTUSEA UNUSEAB	LE
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O RECHARGE AREA  YES COMMENTS  NO  IV. SURFACE WATER  SURFACE WATER USE:  A. RESERVOIR, RE	Checkoner ECREATION		N ECCNOMICALLY	11 DISCHAR  I YES  I NO	COMMEN	AL NOUSTRIAL	Ξ 0.1	NOT CURRENTLY US	
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## POTENTIAL HAZARDOUS WASTE SITE

1. IDENTIFICATION							
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WEITH		PART 6 - SAMPLE AND FIELD INFORMATION	TAIL	<u> </u>
II. SAMPLES TAKEN				
SAMPLE TYPE	SAMPLES TAKEN	DE SAMPLES SENT TO		03 831 MA 183 3 2 1 8 2850678 ANA LABE
GROUNDWATER				
SURFACE WATER				
WASTE				
AIR				
AUNOFF				
SPILL				
SOIL				
VEGETATION				
REHTO				
III. FIELD MEASUREMENTS TA	KEN			
·	1			
IV. PHOTOGRAPHS AND MAPS	;			
3: TYPE I GROUND I AERIAL		02 IN CUSTODY OF		
DI MAPS DE LOCATION DE LOCATIO	OF MAPS			
V. OTHER FIELD DATA COLLEC	CTED Provide narrative di	#scrotioni		
		•		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state mes, sample analysis, reports)

	POTENTIAL HAZ			J. IDENTIF	
			PECTION REPORT	ECTION DEPOST	
PART 7 - C			/NER INFORMATION		D 1912747.
II. CURRENT OWNER(S)			PARENT COMPANY Substitute		
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	ľ	1 57777			
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r\$ 0,7 →	JUB STATE	C7 ZIP CODE	- 2 CITY	13 STATE	14 ZIP CODE
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H. PREVIOUS OWNER(S) , si most recent	tiesti	<del>,</del>	IV. REALTY OWNER(S) 17 applicable 131	nost recent (#SI)	,
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05 CITY

06 STATE 07 ZIP CODE

V. SOURCES OF INFORMATION (Cre-sourcine references, e.g., state files, sample enarysis, records)

06 STATE 07 ZIP CODE

EPA FORM 2070-13 (7-81)

OSCITY

03 STREET ADDRESS #0 ser #45 #15   04 SCICCOE   2 STREET ADDRESS #0 ser #45 #16   0 STATE   0 SP CCC  05 07   06 STATE   0 TP CODE   4 STT   15 STATE   0 SP CCC  03 **CARS OF SPETATION   09 NAME OF OWNER   200 44 SAN **CATTANDED SHAPE   20 STREET ADDRESS #0 ser #45 * #6 STATE   3 STATE   16 SP CCC  05 07   06 STATE   07 SP CCDE   14 CTY   15 STATE   15 STATE   15 SP CCC  06 STATE   07 SP CCDE   2 STREET ADDRESS #0 ser #45 * #6 STATE   15 STATE   1	<b>SEPA</b>			SITE INSPE	ENTIAL HAZARDOUS WASTE SITE  SITE INSPECTION REPORT  ART 8 - OPERATOR INFORMATION  ILIDENTIF		
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	08 YEARS OF OPERATION	D9 NAME OF OWN	ER DURING THIS	PERIOD			<u> </u>
IV. SOURCES OF INFORMATION (Cite specific reterences, e.g., state files, sample analysis, recons)	IV. SOURCES OF INFO	RMATION - Cure so	echic reterences. e.g	state lifes, sample analy:	из, /ерола)		
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### POTENTIAL HAZARDOUS WASTE SITE

I. IDENTIFICATION

SEPA	SITE INSPECTION REPORT PART 9 - GENERATOR/TRANSPORTER INFORMATION			37478	TATE OF SITE NUMBER		
II. ON-SITE GENERATOR	<del> </del>				<del></del>		
O1 NAME		02 0 + 8 NUMBER					
C3 STREET ACCRESS 20 361 350 416		04 SIC CODE					
05 CITY	06 STATE	07 ZIP CODE					
W CCC OUT OCCUPATIONS							
III. OFF-SITE GENERATOR(S)		C2 D-8 NUMBER	01 NAME		DZ D + B NUMBER		
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DI NAME		02 D+8 NUMBER	01 NAME		02 D+8 NUMBER		
D3 STREET ADDRESS 20 Box 250 / Grc /		04 SIC CODE	03 STREET ADDRESS IP 0 301. RFD # 910.	~	04 SIC CODE		
05 CITY	CE STATE	D7 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE		
IV. TRANSPORTER(S)	Tr	2 D + 8 NUMBER	D1 NAME		02 D+8 NUMBER		
v	,				102 B 1 3 11 3 11 3 11 5 11 11 11 11 11 11 11 11 11 11 11 1		
3 STREET ADDRESS > 0 Box 4FD * erc	· *	04 SIC CODE	03 STREET ADDRESS (2 0 Box 250 + 910 .		04 SIC CODE		
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I NAME		02 D+8 NUMBER	01 NAME		02 0 + 8 NUMBER		
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#### POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION

OF STATE DE SITE NUMBER

TALL THE TOTAL

	PART 10 - PAST RESPONSE ACTIVITIES		TN1121212
PAST RESPONSE ACTIVITIES			
01 I A WATER SUPPLY CLOSED 04 DESCRIPTION	DZ DATE	03 AGENCY	
01 I B. TEMPORARY WATER SUPPLY PROVIDED 04 DESCRIPTION	) 32 DATE	03 AGENCY	
01 I C. PERMANENT WATER SUPPLY PROVIDED 04 DESCRIPTON	32 DAFE	03 AGENCY	
01 I O SPILLED MATERIAL REMOVED 04 DESCRIPTION	02 0ATE	03 AGENCY	
01 Z S. CONTAMINATED SOIL REMOVED 04 DESCRIPTION	02 DATE	03 AGENCY	
01 I F WASTE REPACKAGED 04 DESCRIPTION	02 DATE	03 AGENCY	
01 I G. WASTE DISPOSED ELSEWHERE 04 DESCRIPTION	02 DATE	03 AGENCY	
01 I H ON SITE BURIAL 04 DESCRIPTION	02 DATE	03 AGENCY	
01 II I IN SITU CHEMICAL TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY	
01 I J N SITU BIOLOGICAL TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY	
01 [] K. N SITU PHYSICAL TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY	
01 IL ENCAPSULATION 04 DESCRIPTION	02 DATE	03 AGENCY	
01 Z M EMERGENCY WASTE TREATMENT 04 DESCRIPTION	O2 DATE	03 AGENCY	
01 Z N. CUTOFF WALLS 04 DESCRIPTION	02 DATE	03 AGENCY	
01 T O. EMERGENCY DIKING/SURFACE WATER DI 04 DESCRIPTION	VERSION 02 DATE	03 AGENCY	
01 T P CUTOFF TRENCHES/SUMP 04 DESCRIPTION	02 DATE	03 AGENCY	
01 I Q. SUBSURFACE CUTOFF WALL 04 DESCRIPTION	02 DATE	03 AGENCY	

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## POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 10 - PAST RESPONSE ACTIVITIES

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Ç.	STATE	D2 SITE YUMBER	
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PAF	TT 10 - PAST RESPONSE ACTIV	TITES	
AST RESPONSE ACTIVITIES Communication			
01 TR BARRIER WALLS CONSTRUCTED 04 DESCRIPTION	O2 DATE	03 AGENCY	
01 T.S. CAPPING COVERING 04 DESCRIPTION	J2 DATE	03 AGENCY	
C1 T BULK TANKAGE REPAIRED 04 DESCRIPTION	02 DATE	03 AGENCY	
01 E U GROUT CURTAIN CONSTRUCTED 04 DESCRIPTION	O2 DATE	03 AGENCY	
01 I V BOTTOM SEALED 04 DESCRIPTION	02 DATE	D3 AGENCY	
01 T W GAS CONTROL 204 DESCRIPTION	02 DATE	03 AGENCY	
01 T.X. FIRE CONTROL 04 DESCRIPTON	02 DATE	03 AGENCY	
01 TY LEACHATE TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY	
01 I Z. AREA EVACUATED 04 DESCRIPTION	02 DATE	03 AGENCY	
01 T + ACCESS TO SITE RESTRICTED 04 DESCRIPTION	02 DATE	03 AGENCY	
01 I 2. POPULATION RELOCATED 04 DESCRIPTION	O2 DATE	03 AGENCY	<u></u>
01 = 3 OTHER REMEDIAL ACTIVITIES 04 DESCRIPTION	02 DATE	03 AGENCY	

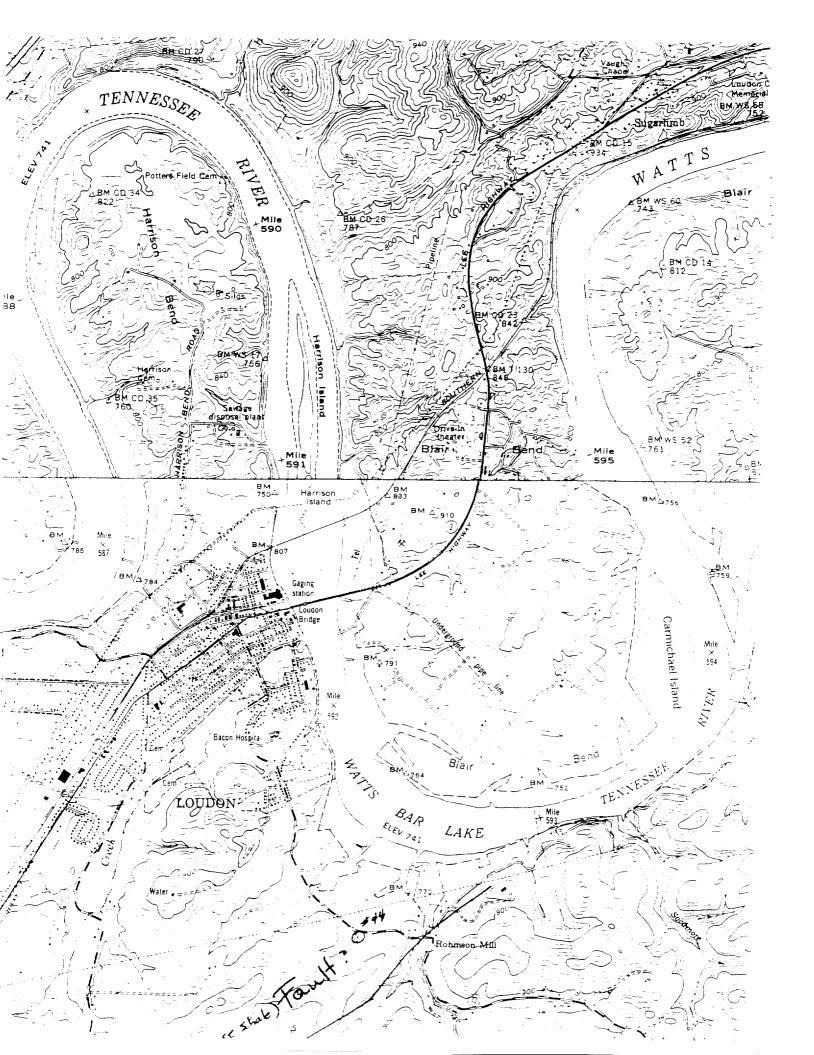
III. SOURCES OF INFORMATION - Cite specific references, e.g., state (fex. samore analysis, reports)



#### POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 11 - ENFORCEMENT INFORMATION

□.	IDENT	IFIC	ATIC	N		
٥.	STATE	02 S	375 1	UMBE	7	74

VLIA	PART 11 - ENFORCEMENT INFORMATION	LTMID9413 13 13
II. ENFORCEMENT INFORMATION		
01 PAST REGULATORY ENFORCEMENT ACTION []	YES INC	
02 DESCRIPTION OF FEDERAL, STATE LOCAL REG	ULATORY ENFORCEMENT ACTION	
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		•
IIL SOURCES OF INFORMATION (Cre assente	references, e.g., state free, samole analysis, recorts!	
,		



### Reference 3

C-586-2-0-222

March 1, 1990

Mr. A. R. Hanke Site Investigation and Support Branch Waste Management Division Environmental Protection Agency 345 Courtland Street, N. E. Atlanta, Georgia 30365

Date:	
Site Disposition:	
PA Project Manager:	

Subject:

Screening Site Inspection, Phase I

Metal Resources, Inc.

Loudon, Loudon County, Georgia EPA ID No. TND991279746 TDD No. F4-9001-171

Dear Mr. Hanke:

FIT 4 conducted a Phase I Screening Site Inspection of Metal Resources, Inc. in Loudon, Loudon County, Tennessee. This inspection included a review of state and EPA file material, a target survey, and an offsite reconnaissance of the property and surrounding areas.

Metal Resources, Inc. is located on Tennessee Highway 2 North in Loudon, Tennessee (Ref. 1). The facility began operations in 1981 and refines scrap aluminum (Ref. 2). The facility filed a RCRA part A application in 1981 and withdrew it in 1982 (Ref. 2).

Metal Resources, Inc. is located in the Valley and Ridge Physiographic Province north of Loudon, Loudon County, Tennessee (Ref. 3 p. 5). In this region the topography is shaped by broad thrust-fault hills trending northeast-southwest (Ref. 1). These direct surface water into a general northeast-southwest orientation. The Tennessee River bisects this target area from east to west, but \_\_\_\_\_\_\_ northward, or southward in response to differenticlly eroded thrust-related ridges (Ref. 1). The

climate is mild, and it has an annual rainfall of 12 inches with a 1-year, 24-hour rainfall of 3.0 inches (Ref. 4, p. 5; 5 p. 43, 63; 6 p. 93).

In this region groundwater is obtained from a regolith and fractured bedrock aquifer system. Beneath the study area the bedrock consists of dolomite Cambrian and Ordovician forms twins (Ref. 3, pp. 36-41). These types of aquifers commonly are not productive greater than 350 feet below land surface. Production is dependent on the presence of fractures, and it is estimated that wells can achieve 100 gallons per minute (Ref. pp. 40, 41). The aquifer beneath the facility is made up of fractured and solution dissolved portions of the dolomitic Newala Formation and its overlying sedimentary regolith. The residual clay sediments of the Newala Formation represent the layer of lowest hydraulic conductivity between the combrian aquifer and the surface. Sediments of this kind have been shown to have a hydraulic conductivity in the 1x10-7 to 1x10-9 cm/second (Ref. , p. 29). Groundwater would be expected to be present at a depth of 80 to 85 feet below land surface. (Ref. ).

Four municipal water systems (Loudon City utilities, Piney Utility District, the Dixie Lee Utility Water System and the LeNoir City Water System) are the primary suppliers of water to areas within 4 miles of the site. The Loudon City Utilities obtain its water from a surface intake on Watts Bar Lake, which is formed by the Tennessee river (Ref. 1). The intake is approximately 4,600 feet upstream from the Metal Resources facility (Ref. 1). A small spring, 3.5 miles southwest of the dump, is also used as a municipal water source; however, the Tennessee River acts as a barrier to surface, or groundwater migration (Ref. 1). The area of coverage includes the town of Loudon, an area to the west of the city south of the Tennessee River, and an area to the east of Loudon, north of the River. The system serves 2,500 connections or 9,500 persons (Refs. 1,).

The Piney Utility District obtains its water from a spring 2 miles south of the site. the spring is located on Clear Branch Road near Robinson Mill Road. Piney Utility also can purchase water from the Loudon City Utilities as a back up. the Tennessee River would act as a barrier to surface, or

groundwater migration from the facility site. this water system supplies water to 820 connections and has an area of coverage southeast of the city of Loudon (Refs. 1, ).

The Dixie Lee Utility System supplies municipal water to a small area north of the city of Loudon and has three different sources of water, from a spring four miles north of the facility, a surface water intakes on Ft. Loudon Lake and from LeNoir City Utility, which also obtains water from Ft. Loudon Lake. However, none of these water sources would be influenced by conditions due to distance from the study area (Refs. 1,)

The LeNoir City Utility System supplies municipal water to the northeastern portion of the study area. The LeNoir City Utility receives water from intakes on Ft. Loudon Lake intakes are upstream and beyond the 4-mile radius of the study area (Ref).

A map showing the extent of the municipal water distribution lines within the 4-mile radius is
enclosed (Ref. 1). A house count taken from the approprints topographic maps indicates that
homes or persons are not served by the municipal systems in a 3-mile radius from the site. If a 4-
mile radius is considered, there are additional homes or additional persons using
groundwater. The closest private well to the site would be feet to the (Ref. 1).

The Metal Resources, Inc. facility is located on the side of a hill. Surface water would drain to the north.

Site conditions would not influence any surface water intakes used for municipal water supplies. The closest downstream surface water intakes are at Kingston and Rockwood. Both of these are more than 15 stream miles in distance form the site. The Tennessee River is used recreationally for fishing, swimming and boating (Refs.).

•					
Land use within the 4-mile radius of the facility	would include single-family residential housing,				
which is adjacent to the property and commercial/industrial/institutional use in the of Loudon and					
LeNoir City. Outside the two city limits, land is rural in nature (Ref. 1)., with the closest residence					
being withinfeet (Ref. ). The population with 1 mile is estimated to be persons and within 4					
miles is persons (Ref. ). the number of workers at the facility is not known.					
Endangered species and sensitive habitats are list	ted as being in Loudon County. The slackwater				
dorter (Etheostoma boschungi) and the snail darter (Percuna tanasi) are classified as threatened in					
Loudon County. In addition, the white warty-back	psarly mussel ( <u>Plethobascus cicatricocus</u> ) is listed				
as endangered in the Tennessee River (Ref. ).					
Based on the results of this evaluation and the attac	ched reference material, FIT 4 recommends that no				
further remedial action be planned for the Metal I	Resources, Inc., facility. Please contact me at NUS				
Corporation if you have and questions about this sit	e.				
Very truly yours,	Approved:				
Clifford Leonard, Jr.					
Project Manager					
CUma					
Enclosures					

CC: Kelly Cain



### BLACK & VEATCH Waste Science, Inc. Project 52012.523

Logbook for Documentation of Site Visit February 5 - 7, 1995

Metal Resources, Inc.
Loudon, Loudon County, Tennessee
EPA ID No. TND991279746

Recorded by:

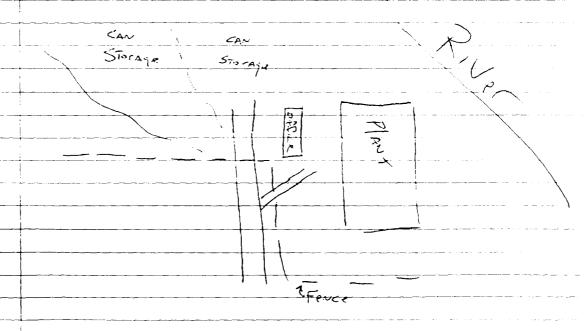
Jon Erskine, Site Geologist

Reference 4

	_ l				
		DIXIR LER UTILITIES	Spring 600,000 gallons		
		DIXIA LAR UTILITIES 615 986-2025	Spring 600,000 gallons		
			15- UD 300,000		
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115		Purey Util Dist (6)458-4411  BE Presley 458-2725  Rith Spring 1,130 - 2670.2			
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		Louden			
·	den	Lover City Water System (615) 458-2091			
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· · · · · · · · · · · · · · · · · · ·		TENN River			
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			200		

Active at Site. Site is no longer on Hybray II As before I Site is Now south of town At the end of Cecil B webbe drive in An industrial park by the Tennessee River, Site is active and divided into two parts, RACH surrounded by a barb wire force. One half of the Site hours A process, plant and offices, while the other half is for storing Aluminum scrap (recycled Cans). Scrap Aluminis pressed into Parse rectangles. It is hard to see the site from the road duy to hills and vogatation in Surface water run-off Appears to flow straight to river No special drainage controls. Are notice ables. There are propably town about 100 workers in site (max).

Site Statch from road



		7/7/95/ 1 ( ()+/ [)
		2/7/95 Louden County OT./ DIST.
	10:00	Showed me water line maps for LCUD. He
		Nelped me transfer the water line into onto USGS
		intake location, And delineated service Areas by
	=	Street. He said that LCUD provides war to 2,700
		Deople Entirely from One Surface water intake. No groundwater is utilized.
		Phone (615) 986-6591
	- · · · - <del>-</del> ·-	
-		
	100 1000 0	

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		Dixie Lee OTILITIES 2/7/95
	<b>+</b> · · · ·	Bill Cusick , Dixe Lee WATER Comissioner, showed
		ma ware- Service Areas for Divis Lee Utilities on USGS
	<u></u>	maps. He located the Dixie Lea Spring and said that
		Dixie Lee pumps APProx 600,000 gallows a day from
		the Spring, and purchases 200,000 gallons Aday
	' T	from the Lorder Covery UT. 1 Dist, and
-		an additional 300,000 gallons & day from the
		to 3,000 hook-ups. The source of First UTI
	<u></u>	Dist water is not located within the 15 mile
		TOL or within \$4 miles of the site.
	!	
	· · · · · · · · · · · · · · · · · · ·	Phone: (615) 986-2025
		: T
	<b>*</b>	
	·	
-		
	· · · · · · · · · · · · · · · · · · ·	

Jahn Davis reported that LCWS serves Approx 2,300 Connections. Mr. Davis delineated service Areas on A USGS topo map. He identified surface LCWS' surface water intake and spring. Approx 90% of their water comes from the surface warer intake, and 10% from the spring.

Phone: (615) 458-2091

Mr Davis believes the the spring draws water from the surficial Aquifer (regulité?)

Pinay OT/ Dist.	5
BE Presley, manager, delineated service Areas on a USGS map. Mr Presley identified the spring where all of Pinex's water is drawn from. Piney provides water to 1,130 connections.	
Phone (615) 458-4411	
Spring located 13/4 miles south of Sitt	

2300 Clayton Road Suite 1280 Concord, California 94520-2100

# OVERSIZED DOCUMENT



Reference 6

1990 Census of Population and Housing Summary Population and Housing Characteristics

### Tennessee

Issued August 1991



U.S. Department of Commerce Robert A. Mosbacher, Secretary Rockwell A. Schnabel, Deputy Secretary

Economics and Statistics Administration
Michael R. Darby, Under Secretary
for Economic Affairs and Administrator

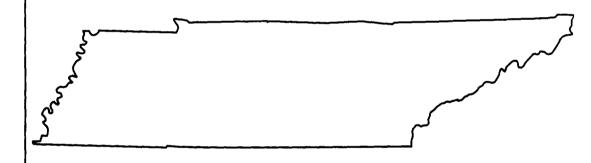
BUREAU OF THE CENSUS Barbara Everitt Bryant, Director

			fa	mily household	1		Hantamily	hausenoids		Persons	<b>ж</b> –	241500	ער קטפא א ז	aners .
	; !						Hours	eholder living	plone					
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vision	Persons in households	All house- holds	Total	couple family	husband present	Torci	Total	Total	Female	Household	fam <del>ily</del> i	fotal	hondazed persons	drau, ex
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اسا	67 595	27 384	19 846	16 !81	2 958	7 518	6 911	3 117	2 547	2 47	2 96	655	578	,
and County	30 031	11 608	8 768	7 087	1 289	2 840	2 536	1 290	1 017	2 59	3 01 (	390	343	3
soe County	14 255 8 608	5 784 3 261	4 333 2 522	3 732 2 104	465 300	1 451 739	1 349 570	751	603 240	7 46 7 54	2 90 3 06	269 1 061	225	1
dey County	84 463 72 C43	33 624 27 604	25 344 21 157	21 284 17 518	3 237 2 841	8 780 6 447	7 400 5 714	3 267 2 277	2 661 1 826	2.51 2.61	2.94 3.02	1 506	1 044 539	1 130
nobel County	34 783 10 356	13 150	10 158	8 036	1 702 351	2 992 945	2 789 872	1 496	1 192	2 65 2 60	3.07 3.03	29.5	285	1
non County	26 860	3 980 10 727	3 035 3 013	2 574 6 612	1 092	2 714	2 531	1 435	1 148	2 50	2 95	654	388	76
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ister County	11 791	4 558	3 505	2 933	446	1 053	963	514	422	2.59	3.01	1 028	187	81
borne County	. 25 533 7 158	9 629 2 855	7 579	6 266 1 748	1 007	2 050   711	1 910	935	772 214	2.65 2.51	3 05   2.93	6C.4 80	210 71	39
de County	28 840 39 855	11 191 15 500	8 483	6 551 9 693	1 500 l	2 708   3 773	2 470 3 431	1 138 1 588	882 . 1 264	2.58 2.57	3 00	301 484	270 452	3
ekett County	13 103	5 183	3 356	3 141	567	1 327	1 257	766	623	2.53	3 00 [	275	275	•
noerland County vidson County	34 207 489 689	13 426 207 530	10 451 131 395	\$ 842 95 592	1 265   29 555	2 975   76 135	2 688 62 830	18 268	1 026	2 55 2 36	2 92   2 97	529 21 095	529 10-317	10 77
catur County	10 330	4 216	3 109	2 503	19!	1 107	1 032	607	461	2 45	2.91	142	142	
Kalb County	14 237 34 532	5 696 13 019	4 316 10 099	3 574 8 188	1 510	1 380 2 920	1 293 2 648	1 285	563 3 007	2 50 2 65	2.93 3.06	17 <u>7</u> 529	106 389	1 1.4
er County	34 343 25 110	13 617 8 453	9:923 6:717	7 869 5 038	1 334	3 694 1 736	3 360 1 576	1 773 765	1 435 556	2 52 2.97	3 01 1	511 449	474 436	1
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sion County	33 429 45 568	12 660 18 361	9 883 13 472	8 417 10 708	1 135	2 777 4 889	2 530 4 573	1 J12 2 560	1 061 2 114	2.64 2.48	3.04 2.96	1 296 747	314 644	781 10
es County	25 336 16 912	9 832	7 454 5 076	6 038 4 781	1 116 591	2 378	2 218 1 217	1 166 590	891 459	2.58 2.64	3.02 3.02	405 183	205 146	200 3
eine County	54 175	6 394 21 482	16 280	13 290	2 295	5 202	4 747	2 120	1 687	2 52	2 94	1 678	727	95
andy County	13 157	4 784 19 429	3 743 14 795	3 048 11 895	534 2 314	1 041	976 4 138	522 1 629	1 313	2 75 2 56	3 18 2 97	205 730	193 525	1; 2G
milion County	49 750 279 044	111 799	78 964	60 790	15 042	32,835	29 025	11 581	9 488	2 50	3 02	6 497	3 622	2 87
ricock County	6 571 22 589	2 484 8 275	1 974 6 190	1 505 4 534	1 356	2:086	532 1 887	769 968	212 751	2.65 2.73	3 07	166 788	168 770	;
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suston County	5 842 15 551	2 683   6 063	2 039 4 593	1 705 3 Baa	261 561	1 470	604 1 373 !	335 665	248   514	2.55 2.56	2 98 ; 3 G1 (	176 <b>2</b> 44	163 110	13.
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ise County	323 400 6 057	133 639	90 561 1 735	71 679 1 328	15 ±78 323	43 078 683	36 661 625	12 962 343	10 642   252	2 42 2 50	2.97 3.50	12 349	1 288 1 288	9 06
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Minn County	41 710	16 351	12 458	10 275	1 751	3 893	3 600	1 755	1 425	2 55	2 95	673	<del>1.</del> 6	223
chairy County	22 180 15 817	8 834 ) 6 159	6 678 4 711	5 592 4 027	824 ( 522 )	2 156 1 448	2 014 1 356	1 073	863   577	2 51 2 57	3 00	247 89	747 56	2
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lergs County	29 940	11 363	8 781	7 231	1 163	2 582	2 385	1 167	917	2 63	3.06	601	317	28-
lanigamery County	93 516 4 714	34 345 1 734	28 974 1 391	22 284 1 272	3 712 112	7 431	6 2C8 327	2 071 169	1 428	2 72 2 72	3.09	4 992	472 7	6 513
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erry County	4 494	2 512   1 786	1 330	1 105	167	607 456	568 430	239	184	2 52	2 98	54	49	
olk County	13 538	5 092	4 010	3 373	455	1 082	990	519	418	2 56	2 93	105 2 954	105 534	2 42
utnam County	48 419 23 638	9 185	13 994 6 985	11 578 5 606	1 913	5 759 2 200	4 757 7 022	1 945 984	1 593 779	2.45 2.57	3 00	706	1.0	29
oane County	46 747 41 045	18 453   14 801	13 967 11 886	9 903	1 831	4 486 2 915	4 126 ° 2 623	1 970 1 283	1 592 .	2.53 2.77	2.96   3  4	480 9:4	743 134	4.
urherford County	113 372	42 118	31 225	25 678	4 272	10 893	8 545	2 671	2 136	2 59	3 21	5 193 169	1 455 169	3 74
equalchie County	18 189 8 778	6 534 3 287	5 128 2 555	4 150 2 087	765 353	732	656	684 322	553 252	2.78 2.67	3 06	85	85	
evier County	50 394 803 085	19 520 303 571	15 091 212 076	12 706 144 773	1 853 56 404	4 429 91 495	3 858 77 999	1 561 25 382	20 245	2 58 2 65	2.96 3.22	9 نے 23 کو 245	582 12 180	11 66
mith County	13 998	5 358	4 151	3 579	147	1 207	1 127	643	512	2.61	3.03	145	134	1
lewart County	9 295 141 449	3 678 56 729	2 812 42 516	2 452 35 372	251 5 632	866 14 213	793 i 13 048	444 5 674	344 4 669	2.53 2.49	2.93	184 2 147	95 1 351	81 79:
urmer County	102 065	36 850	29 511	24 907	3 545	7 339	6 384	2 579	2 093	2.77	3 13	1 216	637 767	57
pron County	37 301 5 795	2 261	10 345 1 715	8 119 1 402	1 780   241	2 688 546	2 410   512	1 198 265	924 ! 207	2.86 2.56	3.27	267 125	100	2
nical County	16 318 13 573	6 621 4 932	4 938 3 992	4 074 3 325	653 506	940	1 565 841	868 385	703 300 I	2.46 / 2.75	2.91 3.10	231 121	220 90	1
an Suren County	4 841	1 799	1 451 9 601	1 199 7 861	190	348	322	149	105	2 69 2.57	3 OS 3 OI	395	5 281	1
Yashington County	32 597 <b>37 89</b> 1	12 681 35 823	25 375	20 537	1 365 3 798	3 080 10 448	2 834 9 004 :	1 404 3 632	1 152 2 945	2.37	2 95	4 424	2 017	2 40
Yayne County	13 709	5 174	4 079	3 448 7 194	482	1 095	1 011	551 1 475	448	2 65 2 47	3 03 2 95	2 4C3	204 479	1 92
Peakley County	29 569 19 880	11 992 7 722	8 589 5 984	4 989	1 076 765	3 403 1 736	7 928 1 622	915	1 203 725	2.57	2 98	2:0	192	- 1
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### Water Resources Data Tennessee Water Year 1993

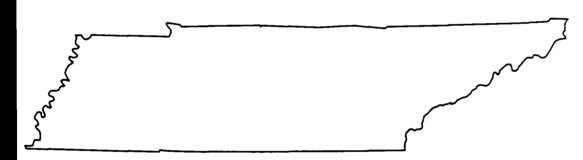
by D.F. Flohr, F.D. Edwards, J.G. Lewis, and R.A. Orr



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT TN-93-1 Prepared in cooperation with the State of Tennessee and with other agencies



### Water Resources Data Tennessee Water Year 1993



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT TN-93-1 Prepared in cooperation with the State of Tennessee and with other agencies

#### RESERVOIRS IN TENNESSEE RIVER BASIN--Continued .

03535900 MELTON HILL LAKE.--Lat 35°53′04", long 84°18′01", Loudon-Roane County line, Hydrologic Unit 06010207, 9 mi southwest of Oak Ridge, 19 mi west of Knoxville, 57 mi downstream from Norris Dam on Clinch River, and at mile 23.1 DRAINAGE AREA, 3,343 mi². PERIOD OF RECORD, August 1962 to current year. GAGE, water-stage recorder. Datum of gage

REMARKS.--Reservoir is formed by concrete gravity dam. Spillway is equipped with three radial gates, each 42 high by 40 ft wide. Dam completed and storage began May 1, 1963; water in reservoir first reached minimum pool elevation May 23, 1963. Revised capacity table put into use Jan. 1, 1971. Total capacity at elevation 796 ft, top gates, is 63,500 cfs-days, of which 16,100 cfs-days is controlled storage above elevation 790.0 ft, normal minimum r Reservoir is used for navigation, power, and recreation.

COOPERATION. -- Records furnished by Tennessee Valley Authority.

EXTREMES FOR PERIOD OF RECORD. -- Maximum contents, 64,900 cfs-days, Mar. 16, 1973, elevation, 796.45 ft; minimum after first filling, 35,100 cfs-days, Feb. 9, 1966, elevation, 784.10 ft.

EXTREMES FOR CURRENT YEAR .- Maximum contents, 61,100 cfs-days, Mar. 29, elevation, 795.20 ft; minimum, 47,200 cfs-days, Feb. 4, elevation, 789.89 ft.

03543000 WATTS BAR LAKE.--Lat 35°37′13", long 84°47′00", Rhea County, Hydrologic Unit 06010201, at Watts Bar Dam on Tennessee River, 6.5 mi southeast of Spring City, 72.4 mi downstream from Fort Loudoun Dam, and at mile 529.9. DRAIN AREA, 17,310 mi<sup>2</sup>, approximately. PERIOD OF RECORD, October 1941 to current year. GAGE, water-stage recorder. Datu gage is sea level.

REMARKS.--Reservoir is formed by concrete dam with riprapped earth embankments. Spillway equipped with 20 radi gates, each 32 ft high by 40 ft wide, also one 2-section leaf trashway gate 16.3 ft high by 24 ft wide. Storage beg with partial closure Dec. 12, 1941, and final closure Jan. 1, 1942; water in reservoir first reached minimum navigat pool elevation Feb. 17, 1942. Revised capacity table put into use Jan. 1, 1971. Total level pool capacity at eleva 745.0 ft, top of gates, is 592,400 cfs-days, of which 191,000 cfs-days is controlled flood storage above elevation 7. ft, minimum navigation pool. Reservoir is used for navigation, flood control, and power.

COOPERATION. -- Records furnished by Tennessee Valley Authority.

EXTREMES FOR PERIOD OF RECORD. -- Maximum elevation, 745.40 ft, Mar. 17, 1973; minimum after first filling, 733.4

ft, Mar. 20, 1945.

EXTREMES FOR CURRENT YEAR.--Maximum midnight contents, 518,500 cfs-days, Nov. 5; maximum elevation, 741.47 ft, Nov. 5; minimum midnight contents, 411,300 cfs-days, Feb. 11; minimum elevation, 735.26 ft, Feb. 11. Contents bas on backwater profile.

03564000 LAKE OCCEE.--Lat 35°05'40", long 84°38'53", Polk County, Hydrologic Unit 06020003, at Lake Occee Dam on Occee Ri at Parksville, 13.8 mi east of Cleveland, and at mile 11.9. DRAINAGE AREA, 595 mi². PERIOD OF RECORD, June 1914 to current year. Prior to October 1953, published as "Parksville (Occee No. 1) Reservoir," and October 1953 to Septembe 1968, as "Parksville Lake." GAGE, nonrecording gage. Datum of gage is 6.89 ft above sea level. Gage readings have been reduced to sea level.

REMARKS.--Reservoir is formed by concrete dam with 347 ft of spillway. Spillway is equipped with four floodgate each 6 ft high by 20 ft wide and 265 ft of flashboards about 5.7 ft high. Crest of spillway under gates is at elevat 830.82 ft; remainder of spillway is 1.0 ft higher. Dam completed and storage began in 1911. Capacity of reservoir h been considerably reduced by silting. Revised capacity table put into use Jan. 1, 1979. Total capacity at elevation 837.55 ft, about top of flashboards, is 42,300 cfs-days, of which 15,600 cfs-days is controlled storage above elevati 817.9 ft, normal minimum pool. Reservoir is used for power.

COOPERATION. -- Records furnished by Tennessee Valley Authority.

EXTREMES FOR PERIOD OF RECORD. -- Maximum midnight contents observed, 53,300 cfs-days, July 9, 1916; maximum midnight elevation observed, 840.2 ft, feb. 10, 1946; minimum contents observed, 27,300 cfs-days, Jan. 27, 1956, elevation, 817.7 ft; minimum midnight elevation observed, 814.8 ft, Dec. 14, 1934.

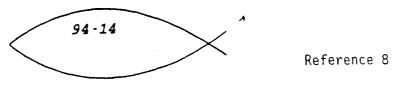
EXTREMES FOR CURRENT YEAR. -- Maximum contents observed, 41,000 cfs-days, May 6, elevation, 836.6 ft; minimum 32,3 cfs-days, Jan. 18, elevation, 826.7 ft.

#### MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

Date	Elevation (feet)	Contents (cfs-days)	Change in contents (cfs-days)	Elevation (feet)	Contents (cfs-days)	Change in contents (cfs-days)	Elevation (feet)	Contents (cfs-days)	Change in contents (cfs-days)
	0353	5900 MELTON	HILL LAKE	*035430	000 WATTS	BAR LAKE	03564	000 LAKE 00	COEE
Sept. 30. Oct. 31. Nov. 30. Dec. 31.	. 793.59 . 793.51	56,500 56,300	-200	740.45 739.99 736.83 737.41	498,400 490,800 434,100 446,800	-7,600 -56,700	834.3 834.7 831.2 832.2	38,700 39,100 35,900 36,800	+400 -3,200 +900
CAL YR			-400	-	-	+32,500		-	+4,200
Jan. 31. Feb. 28. Mar. 31. Apr. 30. May 31. June 30. July 31. Aug. 31. Sept. 30.	793.95 793.75 794.14 794.42 793.84 793.52 793.63	57,500 56,900 58,000 58,800 57,200 56,300 56,600	+200 -600 +1,100 +800 -1,600 -900 +300	736.87 736.98 736.61 740.69 740.81 740.61 740.27 740.22 740.04	434,800 435,000 431,600 503,100 505,500 501,600 495,000 494,000 490,700	+200 -3,400 +71,500 +2,400 -3,900 -6,600 -1,000	827.3 828.4 832.5 835.9 834.5 835.1 834.8 835.3	32,700 33,600 37,100 40,300 38,900 39,500 39,200 39,700 39,100	-4,100 +900 +3,500 +3,200 -1,400 +600 -300 +500
WTR YR	- 1993	-	-700	-	-	-7,700	-	-	+400

<sup>\*</sup> Contents based on backwater profile.

## FISHERIES REPORT



## COMMERCIAL FISHING REPORT 1993



By Robert M. Todd



ESTIMATED 1993 HARVEST OF ALL FISH SPECIES COMBINED BY QUARTER REPORTED IN POUNDS

BODY OF WATER	JANUARY - MARCH	APRIL - JUNE	JULY - SEPTEMBER	OCTOBER - DECEMBER	ANNUAL HARVEST
BARKLEY	3,949	160,098	272,490	201,663	638,200
CHEATHAM	0	30,234	1,062	3,649	34,945
CHEROKEE	1,364	2,856	23,566	0	27,786
CHICKAMAUGA	0	202,652	120,897	79,265	402,814
DAVY CROCKET	0	0	0	0	0
DOUGLAS	219,434	154,647	89,581	147,876	611,538
FORT LOUDOUN	0	18,118	15,392	27,077	60,587
GUNTERSVILLE	21,703	0	0	3,857	25,560
JOHN SEVIER	0	0	0	0	0
KENTUCKY	213,059	474,114	501,861	766,916	1,955,950
NICKAJACK	20,883	63,789	0	65,571	150,243
OLD HICKORY	2,234	48,778	32,002	38,298	121,312
PICKWICK	13,789 6,523	63,003 366	85,249	54,087	216,128
REELFOOT WATTS BAR	•	20,828	22,063 34,677	2,298 0	31,250 55,505
CHISHOLM	0 358	2,471	531	2,005	5,365
CRUTCHER	0	0	0	2,003	0,303
BRUTENS BR.	0	0	0	0	0
NORTH LAKE	0	0	ő	0	ő
OPEN LAKE	616	ő	ő	ŏ	616
BEECH RIVER	0	0	0	Ő	0
CLINCH RIVER	0	Ő	26,184	0	26,184
CUMBERLAND	18,767	10,669	22,389	45,649	97,474
DUCK RIVER	0	1,500	1,657	0	3,157
EMORY RIVER	0	0	0	0	. 0
FORKED DEER	1,638	0	0	0	1,638
FRENCH BROAD	0	0	0	0	0
HARPETH	0	0	0	0	0
HATCHIE	11,859	11,786	946	12,508	37,099
HIWASSEE	0	0	67	0	67
HOLSTON	0	0	0	0	0
LOOSAHATCHIE	998	0	0	0	998
MISSISSIPPI	29,797	20,816	105,075	37,832	193,520
NOLICHUCKY	0	2,013	2,478	0	4,491
OLD RIVER	7,730	3,642	2,646	4,006	18,024
RED RIVER	<b>0</b> 0	183 212	0	0	183 212
SEQUATCHIE	0	0	0	0	0
WOLF RIVER	0	0	0	Ö	0
COLD CREEK	709	1,281	ő	0	1,990
DEER CREEK	0	0	ő	Ö	0
MORGAN CREEK	ő	ő	Ő	0	Ö
NIXON CREEK	Ö	Ö	Ö	0	0
POND CREEK	0	0	0	0	0
WEST FORK CK	,	0	0	0	0
ALL WATERS	575,410	1,294,056	1,360,813	1,492,557	4,722,836

2300 Clayton Road Suite 1280 Concord, California 94520-2100

# OVERSIZED DOCUMENT



# REPORT OF SURVEY FOR: THREATENED AND ENDANGERED SPECIES WETLANDS STREAM IDENTIFICATION AT A PROPOSED SOLID WASTE LANDFILL SITE BLAIR BEND INDUSTRIAL PARK, LOUDON COUNTY, TENNESSEE

Prepared for:
Metal Resources, Inc.
Blair Bend Industrial Park
Loudon, Tennessee 37777

Prepared by:
ERCE
725 Pellissippi Parkway
P.O. Box 22879
Knoxville, Tennessee 37933-0879

ERCE # 03540903

December 1991

#### INTRODUCTION

Metal Resources, Inc. is seeking a permit for the construction of a solid waste landfill on a tract of property located in the Blair Bend Industrial Park, Loudon, Loudon County, Tennessee. This report addresses three specific regulatory compliance issues associated with regulations promulgated by the Tennessee Department of Environment and Conservation (TDEC), Division of Solid Waste Management. These three issues and applicable regulations are discussed in the following paragraphs.

#### Endangered Species

Rule 1200-1-7-.04(2)(m) requires that:

Facilities shall be located, designed, constructed, operated, maintained, closed, and cared for during the post-closure care period in a manner that does not:

- Cause or contribute to the taking of any endangered or threatened species of plants, fish, or wildlife; or
- 2. Result in the destruction or adverse modification of the critical habitat of endangered or threatened species.

Rule 1200-1-7-.01(2) defines an endangered or threatened species as "any species listed in 50 Code of Federal Regulations (CFR) Part 17, as such list exists on the effective date of this Rule".

#### Wetlands

Rule 1200-1-7.04(2)(p) states: "Facilities must not be located in a wetland".



#### Streams

Rule 1200-1-8.04(3)(a), Buffer Zone Standards for Siting New Landfills, states:

[fill areas are at a minimum]...:

 200 feet from the normal boundaries of springs, streams, lakes, and other bodies of water (except that this standard shall not apply to any wet weather conveyance nor to bodies of water constructed and designed to be a part of the facility).

#### DESCRIPTION OF THE SURVEY AREA

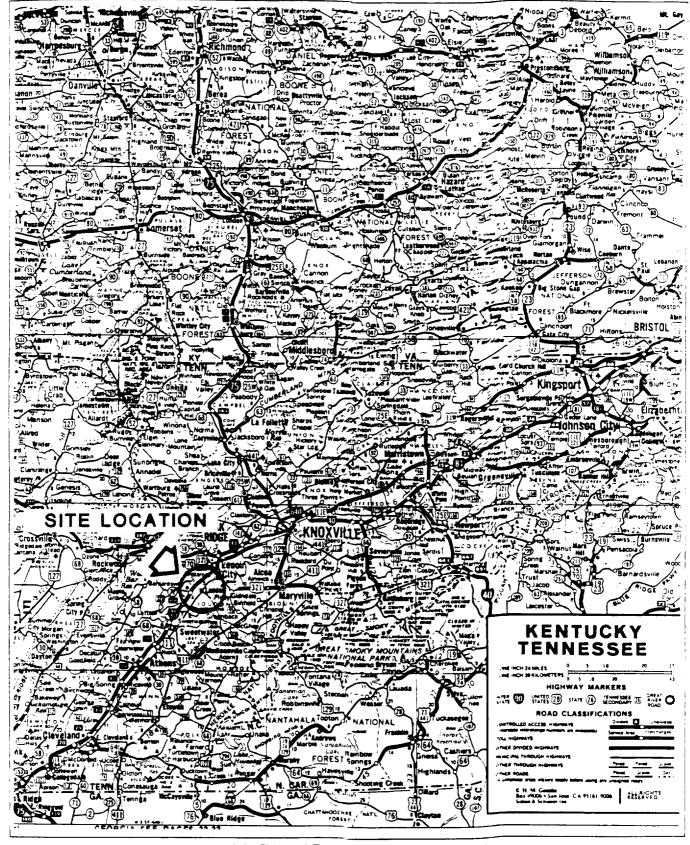
The subject tract is located near Loudon, in the central portion of Loudon County, Tennessee. Figure 1-1 is a depiction of the regional location, and Figure 1-2 depicts the site location within Loudon County.

As shown in Figure 1-3, topography on the subject tract ranges from approximately 750 feet above sea level to 900 feet above sea level; vegetation complexes present include oak-hickory forest, open fields from agricultural abandonment, second-growth cedar/hardwood forests, and vegetation associated with an abandoned home site.

#### ENDANGERED SPECIES KNOWN FROM THE AREA

The Tennessee Wildlife Resources Agency (TWRA) is the regulating agency for endangered and threatened species of wildlife in Tennessee, with the division of Ecological Services of the



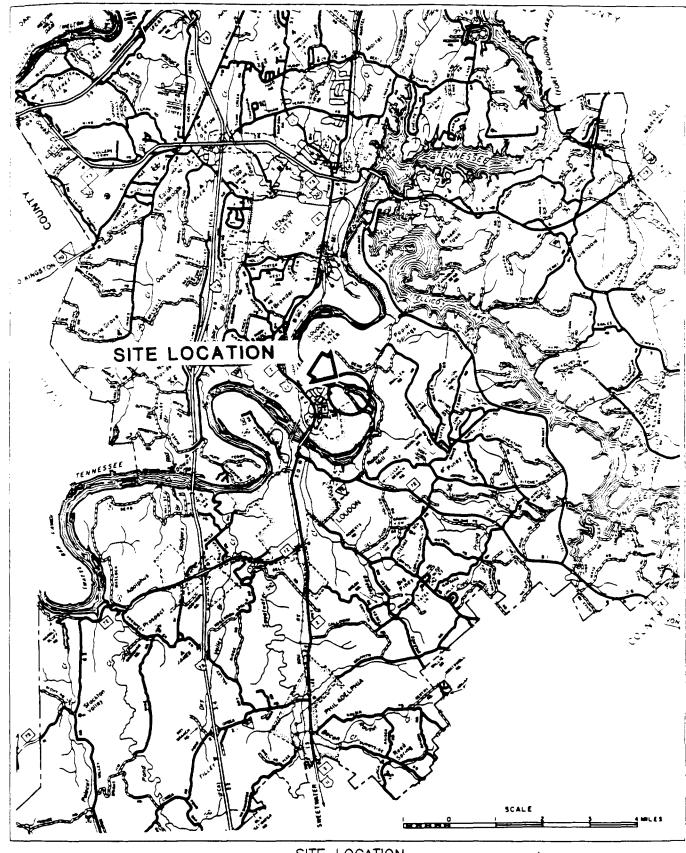




LOCATION OF LOUDON, TENNESSEE

METAL RESOURCES INC PROJECT #13540903 4 5/91 SCALE: 1" = 24 MILES Figure 1-1

₹ ERCE





SITE LOCATION
METAL RESOURCES INC
LOUDON, TENNESSEE
PROJECT #13540903
4/5/91

Figure 1-2



Tennessee Department of Conservation being the corresponding agency for plant species. Both of the agencies maintain lists of species listed as endangered or threatened by the Federal government. Consultations with these two agencies indicated that occurrences of listed species are tracked by county and, within counties, by the United States Geological Survey (USGS) 7.5' quadrangle maps.

The proposed location of the landfill is on the Loudon, TN, quadrangle. Accordingly, the Federal list of endangered and threatened species known to occur on that quadrangle were obtained. The list is given in Table 1. Of the two species listed, one is a mussel and the other is a fish species; both are known from the Tennessee River, which is located adjacent to the subject property.

#### Wetlands

Copies of the National Wetlands Inventory Map for the Loudon, TN, quadrangle were obtained from the United States Department of Agriculture, Soil Conservation Service (SCS). The map showed no previously identified wetlands present on the subject property.

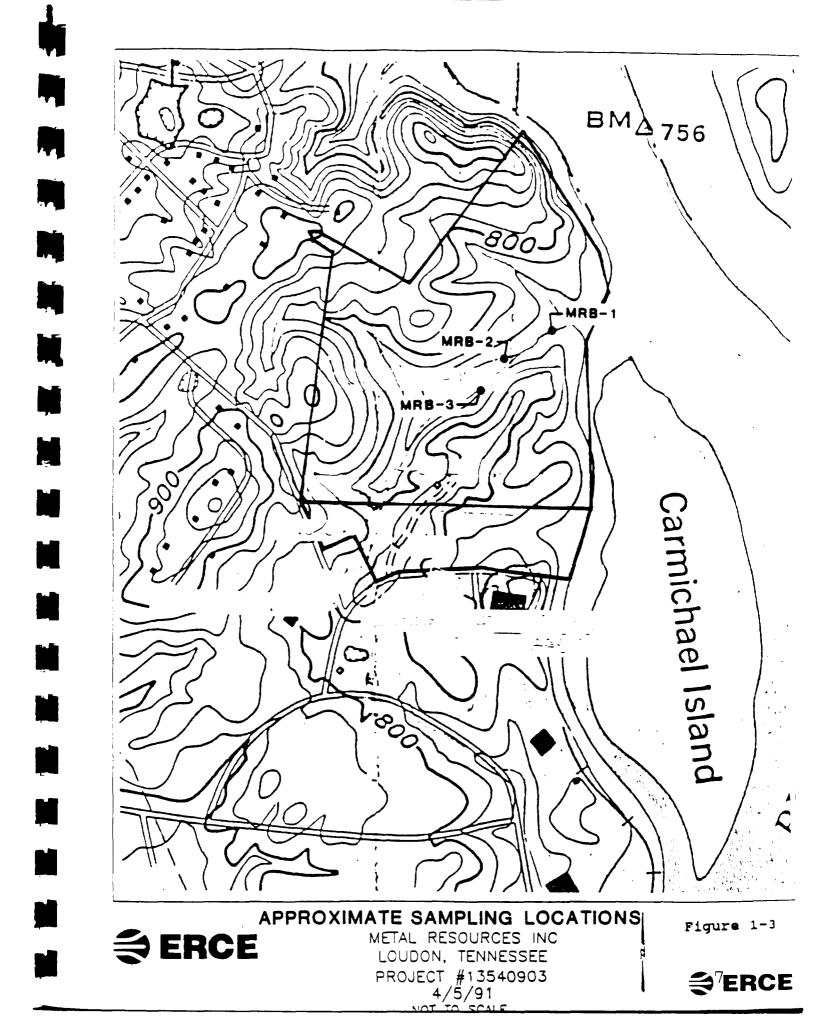
#### Streams

The USGS quadrangle for Loudon, TN, shows three "blue-line" streams present on the subject property (see Figure 1-3). As shown on that map, these streams drain the three major hollows present, merge, and exit the property at the eastern boundary, flowing directly into the Tennessee River.



Table 1. Federally Listed Endangered And Threatened Species Known To Occur On The Loudon, TN, Quadrangle.

Scientific Name	Common Name	Federal Status	State Status
Percina tanasi	Snail Darter	LT	Т
Lampsilis abrupta	Pink Mucket Mussel	LE	Е



#### SURVEY RESULTS AND DISCUSSION

ERCE personnel visited the subject site on 7 July 1991. Although the only endangered and threatened species known to occur on the quadrangle were aquatic species, a systematic survey of the site was made to search for previously unknown occurrences of terrestrial species. In addition, earlier surveys of the tract conducted in April and May of 1991 were made to determine the presence of potential jurisdictional wetlands and "blue-line" streams. The results of these surveys were as follows:

No threatened or endangered species were observed. Of the two state listed plant species known from the Loudon quadrangle, <u>Aster ericoides</u> (White Heath Aster) and <u>Isoetes macrospora</u> (Lake Quillwort) neither individuals nor appropriate habitat was observed.

No potential jurisdictional wetlands were discovered. of the proposed landfill site are situated drainageways, no obligate hydrophytic plants were observed and few facultative hydrophytes were seen. Only one small body of standing water is present on the site. This approximately 20 feet by 20 feet area appears to be the result of previous construction activities on the southeastern boundary of the site. Appendix I contains the U.S. Army Corps of Engineers determination that no wetland hydrologic characteristics were observed on site.

Only one small reach of stream within the subject property was determined to be perennial in nature. This reach occurs below the confluence of the two major drainageways on the site. An investigation of the macroinvertebrate communities the drainageways was conducted to assist in this conclusion. results of this investigation are included as Appendix II. Figure 1-3 shows the locations of the benthic sampling sites. The reach of stream determined to be perennial lies approximately 1,200 feet from the closest proposed construction activities associated with the landfill. Personnel from the Tennessee Department of



Environment and Conservation (TDEC), Division of Solid Waste Management, visited the proposed site and determined that no jurisdictional waters of the state, other than the reach described above, were present.

As a result of all the surveys conducted, the development of the proposed landfill should not be affected by any of the regulatory constraints previously described.

May 24, 1991

Eastern Regulatory Field Office

SUBJECT: Wetlands Jurisdictional Determination at Tennessee River Mile 594.3R, Loudon County, Tennessee

Mr. Mike Morton Metal Resources, Inc. Post Office Box 386 Loudon, Tennessee 37774

Dear Mr. Morton:

This refers to the recent request made on your behalf by Mr. Carlos Naranjo, of ERCE, for a jurisdictional determination of wetlands on your commercial property at Blair Bend Industrial Park, Loudon County, Tennessee. A May 22, 1991, onsite inspection revealed that the flagged area to the left of the current Metal Resources building, approximately one acre in size, is an upland area which does not contain wetland hydrologic characteristics. Therefore, a Department of the Army Permit will not be required for any proposed fill placement on the tract. This determination is valid for a period of two years from the date of this letter.

If you have further questions or comments, please contact this office at the above address or telephone (615) 986-7296.

Sincerely,

Catherine B. Elliott Manager, Eastern Field Office Operations and Readiness Division

Enclosure

Copy Furnished:

√Mr. Carlos Maranjo ERCE 725 Pellissippi Parkway P.O. Box 22879 Knoville, Tennessee 37933



## APPENDIX II STREAM CHARACTERIZATION



#### STREAM CHARACTERIZATION

A characterization of potential blue-line streams present on the subject property was conducted in April, May, and July 1991. The scope of work for this characterization included:

- O A visual examination of streams which are shown on the Loudon quadrangle as "blue-line streams" to determine the presence/absence of surface flow;
- o Sampling of the streams and stream sediments for the possible presence of benthic macroinvertebrates;
- o The identification of any benthic macroinvertebrates present in the samples;

Results of the benthic characterization of Samples MRB-1, MRB-2, and MRB-3 are given in Table I of this Appendix. In total, the three samples contained 14 species represented by 95 individuals. The three stations are discussed below.

Station MRB-1, located below the confluence of the two major drainageways approximately 100 yards upstream from it's entrance into the Tennessee River, contained the most species, 10, represented by 30 individuals. All species found in this sample are stream species and require well oxygenated flowing water to survive.

Station MRB-2 was located in the drainageway which enters from the northwestern portion of the subject site, approximately 100 feet upstream of the confluence of the two major drainageways. The location was within 10 yards of the point at which surface water was first present in this drainageway. The sample contained two species represented by seven individuals. Gammarus sp. is a species found in seep springs or small streams which remain cool



year round; the second species present (<u>Ironoquia</u> sp.) is found in small streams.

The third station, MRB-3, was located in the drainageway which drains from the southern most major hollow on the subject site. At the time of the sampling event, this drainageway displayed intermittent surface flow. The fauna found at this station consisted of four species represented by 58 individuals. Of the 58 individuals, however, 55 were of a single species. These species are considered semiaquatic and prefer damp or wet habitats rich in organic debris; the permanent presence of water is not a requirement for survival of these species.

#### CONCLUSIONS

Consistent with the scope of work for the stream classification previously discussed, ERCE formulates the following conclusions based on the field work and analyses presented.

Identification of benthic invertebrate species present in samples taken from streams on the subject site indicate:

- o The stream reach downstream of the confluence of the two major drainageways should be considered a perennial stream. This reach is approximately 100 yards in length before it's entrance into the Tennessee River.
- o The drainageway which enters from the northwestern hollow on the subject site should be considered an intermittent stream from the point at which it appears on the surface. This point is approximately 100 feet upstream of the confluence of the two major drainageways on the site.



- The drainageway which proceeds northeastward from the vicinity of Webb Road should be considered an ephemeral stream.
- O The small drain which slopes from the northeastern most hollow and empties below sample station # MRB-1 had no defined drainageway or streambed. No water was observed in this hollow during the course of all of the site visits. Therefore, no aquatic samples could be collected.



Table 1. Macroinvertebrates taken from standing water on the Blair Bend Industrial Park, Loudon County, Tennessee on April 3, 1991.

SPECIES	MRB-1	STATION MBR-2	MBR-3
ANNELIDA			
Oligochaeta			
Lumbricidae			1
ARTHROPODA			
Crustacea			
Gemmaridae			
Gammarus sp.		2	
Insecta			
Ephemeroptera			
Baetidae			
Baetis sp.	1		
Plecoptera	_		
Amphinemura sp.	2		
Trichoptera			
Limnephilidae		_	
Ironoquia sp.	1	5	
Diptera			
Chironomidee			
Cardiocladius obscurus	1		
Chaetocladius			
piger sp. gp.			55
Cricotopus			á
tremulus sp. gp.	4		1
Orthocladius sp.	2		
Parametriocnemus	_		
lundbecki	2		
Thienemanniella xena	1		
Tvetenia			
discoloripes sp. gp.	14		
Tipulidae	2		
Ormosia sp. Psæudolimnophila sp.	_		1
raeddollmnophila sp.			•
TOTAL NO. OF ORGANISMS	30	7	58
TOTAL NO. OF SPECIES	10	2	4

METAL RESOURCES

LATITUDE 35:44:39 LONGITUDE 84:18:40 1983 POPULATION

KM 	0.00400	.400810	.810-1.60	1.60-3.20	3.20-4.80	4.80-6.40	SECTOR TOTALS
S 1	0	0	0	0	2260		2262
	-	0	U	U	2269	U	2269
S 2	0	0	0	0	0	928	928
S 3	0	0	0	0	0	0	0
S 4	0	0	0	0	1026	0	1026
S 5	0	0	14	0	0	0	14
S 6	0	0	0	1303	1645	0	2948
S 7	0	0	0	951	0	0	951
S 8	0	0	0	0	61	0	61
RING TOTA		0	14	2254	5001	928	8197

press RETURN to continue

MENU: Geodata Handling Data List procedures

Ente**ssipalification of the state of the second of the sec** 

or a command: HELP, HELP option, BACK, CLEAR, EXIT, TUTOR

GEMS> exit

Type YES to confirm the EXIT command; type NO to restart GEMS GEMS> yes

\$ logout

HTW logged out at 16-FEB-1995 13:13:33.15 Itemized resource charges, for this session, follow:

NODE: VAXTM1

ACCT: 9040

PROJ: GEMS0001 USER: HTW

BAUD:

UIC: [000710,000012]

START TIME: 16-FEB-1995 13:12:43.74 FINISH TIME: 16-FEB-1995 13:13:33.15

BILLING PERIOD: 950201

WEEKDAY: THURSDAY TERMINAL PORT: VTA2789

DESCRIPTION OF CHARGE

QUANTITY \_\_\_\_\_\_

EXPENDITURE

ALL CHARGE LEVELS

300 baud CPU TIME

(Seconds) (Seconds)

49 2

0.0000 0.3322

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TOTAL FOR THIS SESSION

This total reflects the charges for this process only,

subprocesses created during this session are accounted for

separately

CLR PAD

NO CARRIER

March 1, 1990

Mr. A. R. Hanke
Site Investigation and Support Branch
Waste Management Division
Environmental Protection Agency
345 Courtland Street, N. E.
Atlanta, Georgia 30365

Date:	
Site Disposition:	
EPA Project Manager:	

Subject:

Screening Site Inspection, Phase I

Metal Resources, Inc.

Loudon, Loudon County, Georgia

EPA ID No. TND991279746 TDD No. F4-9001-171

Dear Mr. Hanke:

FIT 4 conducted a Phase 1 Screening Site Inspection of Metal Resources, Inc. in Loudon, Loudon County, Tennessee. This inspection included a review of state and EPA file material, a target survey, and an offsite reconnaissance of the property and surrounding areas.

Metal Resources, Inc. is located on Tennessee Highway 2 North in Loudon, Tennessee (Ref. 1). The facility began operations in 1981 and refines scrap aluminum (Ref. 2). The facility filed a RCRA part A application in 1981 and withdrewit in 1982 (Ref. 2).

Metal Resources, Inc. is located in the Valley and Ridge Physiographic Province north of Loudon, Loudon County, Tennessee (Ref. 3 p. 5). In this region the topography is shaped by broad thrust-fault hills trending northeast-southwest (Ref. 1). These direct surface water into a general northeast-southwest orientation. The Tennessee River bisects this target area from east to west, but northward, or southward in response to differenticlly eroded thrust-related ridges (Ref. 1). The

climate is mild, and it has an annual rainfall of 12 inches with a 1-year, 24-hour rainfall of 3.0 inches (Ref. 4, p. 5; 5 p. 43, 63; 6 p. 93).

In this region groundwater is obtained from a regolith and fractured bedrock aquifer system. Beneath the study area the bedrock consists of dolomite Cambrian and Ordovician forms twins (Ref. 3, pp. 36-41). These types of aquifers commonly are not productive greater than 350 feet below land surface. Production is dependent on the presence of fractures, and it is estimated that wells can achieve 100 gallons per minute (Ref. pp. 40, 41). The aquifer beneath the facility is made up of fractured and solution dissolved portions of the dolomitic Newala Formation and its overlying sedimentary regolith. The residual clay sediments of the Newala Formation represent the layer of lowest hydraulic conductivity between the combrian aquifer and the surface. Sediments of this kind have been shown to have a hydraulic conductivity in the 1x10-7 to 1x10-9 cm/second (Ref. , p. 29). Groundwater would be expected to be

Four municipal water systems (Loudon System and the LeNoir City Water Syste the site. The Loudon City Utilities obtiformed by the Tennessee river (Ref. 1 Metal Resources facility (Ref. 1). A sn municipal water source; however, the migration (Ref. 1). The area of coverage

Matal Responses

ee Utility Water within 4 miles of ar Lake, which is stream from the is also used as a or groundwater west of the city

south of the Tennessee River, and an area to the east of Loudon, north of the River. The system serves 2,500 connections or 9,500 persons (Refs. 1,).

The Piney Utility District obtains its water from a spring 2 miles south of the site. the spring is located on Clear Branch Road near Robinson Mill Road. Piney Utility also can purchase water from the Loudon City Utilities as a back up. the Tennessee River would act as a barrier to surface, or

groundwater migration from the facility site. this water system supplies water to 820 connections and has an area of coverage southeast of the city of Loudon (Refs. 1, ).

The Dixie Lee Utility System supplies municipal water to a small area north of the city of Loudon and has three different sources of water, from a spring four miles north of the facility, a surface water intakes on Ft. Loudon Lake and from LeNoir City Utility, which also obtains water from Ft. Loudon Lake. However, none of these water sources would be influenced by conditions due to distance from the study area (Refs. 1,)

The LeNoir City Utility System supplies municipal water to the northeastern portion of the study area.

The LeNoir City Utility receives water from intakes on Ft. Loudon Lake intakes are upstream and beyond the 4-mile radius of the study area (Ref).

A map showing the extent of the municipal water distribution lines within the 4-mile radius is enclosed (Ref. 1). A house count taken from the approprints topographic maps indicates that homes or \_\_\_\_\_ persons are not served by the municipal systems in a 3-mile radius from the site. If a 4-mile radius is considered, there are \_\_\_\_ additional homes or \_\_\_\_ additional persons using groundwater. The closest private well to the site would be \_\_\_\_ feet to the \_\_\_\_ (Ref. 1).

The Metal Resources, Inc. facility is located on the side of a hill. Surface water would drain to the north.

Site conditions would not influence any surface water intakes used for municipal water supplies. The closest downstream surface water intakes are at Kingston and Rockwood. Both of these are more than 15 stream miles in distance form the site. The Tennessee River is used recreationally for fishing, swimming and boating (Refs.).

Land use within the 4-mile radius of the facility would include single-family residential housing,
which is adjacent to the property and commercial/industrial/institutional use in the of Loudon and
LeNoir City. Outside the two city limits, land is rural in nature (Ref. 1)., with the closest residence
being within feet (Ref. ). The population with 1 mile is estimated to be persons and within 4
miles is persons (Ref. ). the number of workers at the facility is not known.
Endangered species and sensitive habitats are listed as being in Loudon County. The slackwater
dorter (Etheostoma boschungi) and the snail darter (Percuna tanasi) are classified as threatened in
Loudon County. In addition, the white warty-back psarly mussel ( <u>Plethobascus cicatricocus</u> ) is listed
as endangered in the Tennessee River (Ref. ).
Based on the results of this evaluation and the attached reference material, FIT 4 recommends that no
further remedial action be planned for the Metal Resources, Inc., facility. Please contact me at NUS
Corporation if you have and questions about this site.
Very truly yours, Approved:
Clifford Leonard, Jr. Project Manager
CL/ma

Enclosures

CC: Kelly Cain

NUS CORPORATION AND SUBSIDIARIES		TELECON NOTE	
CONTROL NO.	<b>DATE</b> : 1-30-90	TIME: 11:40	
DISTRIBUTION:			
BETWEEN: Mike Strange	<b>OF</b> : LeNoir City Water Assoc,	PHONE: (615) 986-6591	
AND: Clifford Leonard, Jr., NUS C	Corporation Coffind Linear &		
DISCUSSION:	<del></del>		

NUS CORPORATION AND SUBSIDIARIES		TELECON NOTE		
CONTROL NO.	DATE: 11-15-90	<b>TIME:</b> 9:50 a.m.		
DISTRIBUTION:				
BETWEEN: Stanley McCall	OF: McCall Drillers	PHONE: (615) 986-3683		
AND: Clifford Leonard, Jr., NUS C	orporation			
DISCUSSION:				
You can expect to find groundwat	tor in the Loudon City area at between	en 70 and 75 feet below land surface.		
Tou can expect to find groundwal	er in the Loudon City area at betwee	en 70 and 75 feet below land surface.		

Metal Resources

-Talked to Morty Hertzel

- Knoxville DSWM at site in August 83 - No hazardous waste

- Directions

From Knoxville: I40-75 west

Take 75 south

Exiton Sugar Lem Road

Proceed East till road deadends into U.S. 11

Head towards Loudon, go - 1 mile to small business area

Site is a white building (old cardealership)

Texaco across street

If you cross a bridge in the business area you've gone too far

Metal Resources

1st Jay of production - May 21, 1981 Undeveloped farmland prior to Metal Resources

Frank Com Form

Fat Hertzel - Secretary Freeman Russel - Plant Supervisor Luther James - Shift Supervisor

## U.S. ENVIRONMENTAL PROTECTION AGENCY OFFICE OF EMERGENCY AND REMEDIAL RESPONSE C E R C L I S V 1.2

PAGE: 157 RUN DATE: 02/06/87 RUN TIME: 09:25:40

#### M.2 - SITE MAINTENANCE FORM

		* ACTION: _	
EPA ID : TND991279746			
SITE NAME: METAL RESOURCES I	INC SOURCE: H	*	
STREET : BLAIR BEND INDUST	TRIAL PARK CONG DIST: 02	*	
CITY : LOUDON	ZIP: 37774 *		*
CNTY NAME: LOUDON	CNTY CODE : 105	*	<del></del>
LATITUDE : 35/44/30.0	LONGITUDE : 084/20/00.0	*/	//
LL-SOURCE: R	LL-ACCURACY:	* _	_
SMSA :	HYDRO UNIT: 06010201	*	
INVENTORY IND: Y REMEDIAL I	IND: Y REMOVAL IND: N FED FAC IND: N	. *	
NPL IND: N NPL LISTING DA	ATE: NPL DELISTING DATE:	*	/
SITE/SPILL IDS:		*	
RPM NAME:	RPM PHONE:	*	
SITE CLASSIFICATION:	SITE APPROACH:	*	
DIOXIN TIER:	REG FLD1: REG FLD2: 6	*	
RESP TERM: PENDING ( )	NO FURTHER ACTION ( )	* PENDING (_)	NO FURTHER ACTION (_)
ENF DISP: NO VIABLE RESP PA ENFORCED RESPONS	PARTY ( ) VOLUNTARY RESPONSE ( ) USE ( ) COST RECOVERY ( )		
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#### U.S. ENVIRONMENTAL PROTECTION AGENCY OFFICE OF EMERGENCY AND REMEDIAL RESPONSE C E R C L I S V 1.2

PAGE: 158 RUN DATE: 02/06/87 RUN TIME: 09:25:40

#### M.2 - PROGRAM MAINTENANCE FORM

		*	ACTION: _	:
SITE: METAL	RESOURCES INC			
EPA ID: TND991	279746 PROGRAM CODE: H01	PROGRAM TYPE: *	<b>- *</b>	
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## U.S. ENVIRONMENTAL PROTECTION AGENCY OFFICE OF EMERGENCY AND REMEDIAL RESPONSE C E R C L I S V 1.2

PAGE: 159 RUN DATE: 02/06/87 RUN TIME: 09:25:40

#### M.2 - EVENT MAINTENANCE FORM

			* ACTION: _		
SITE: METAL PROGRAM: SITE	RESOURCES INC EVALUATION				
EPA ID: TND99	1279746 PROGRAM CODE: H01	EVENT TYPE: DS1			
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EVENT NAME:	DISCOVERY	STATUS:	*		_
DESCRIPTION:					
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COOP AGR #	AMENDMENT # STATUS	STATE %			
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# U.S. ENVIRONMENTAL PROTECTION AGENCY OFFICE OF EMERGENCY AND REMEDIAL RESPONSE C E R C L I S V 1.2

PAGE: 160 RUN DATE: 02/06/87 RUN TIME: 09:25:40

#### M.2 - EVENT MAINTENANCE FORM

			* ACTION: _		
SITE: METAL PROGRAM: SITE	RESOURCES INC EVALUATION				
EPA ID: TND99	1279746 PROGRAM CODE: H01	EVENT TYPE: PA1			
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EVENT NAME:	PRELIMINARY ASSESSMENT	STATUS:	*		_
DESCRIPTION:					
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ORIGINAL	CURRENT	ACTUAL			
START:	START:	START: 01/01/84	* _/_/_	_/_/_	_/_/_
COMP :	COMP :	COMP : 08/01/84	* _/_/_	_/_/_	_/_/_
HQ COMMENT:					
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COOP AGR #	AMENDMENT # STATUS	STATE %			
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## U.S. ENVIRONMENTAL PROTECTION AGENCY OFFICE OF EMERGENCY AND REMEDIAL RESPONSE C E R C L I S V 1.2

PAGE: 161 RUN DATE: 02/06/87 RUN TIME: 09:25:40

#### M.2 - EVENT MAINTENANCE FORM

			* ACTION: _		
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EPA ID: TND99	1279746 PROGRAM CODE: H01	EVENT TYPE: SI1			
FMS CODE:	EVENT QUALIFIER :	EVENT LEAD: S	*		_ *
EVENT NAME:	SITE INSPECTION	STATUS:	*		_
DESCRIPTION:					
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			*		
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ORIGINAL	CURRENT	ACTUAL			
START:	START:	START: 06/01/84	* _/_/_	_/_/_	//
COMP :	COMP :	COMP : 08/01/84	*//	_/_/_	_/_/_
HQ COMMENT:					
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RG COMMENT:					
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COOP AGR #	AMENDMENT # STATUS	STATE %			
		0	*		

#### U.S. ENVIRONMENTAL PROTECTION AGENCY OFFICE OF EMERGENCY AND REMEDIAL RESPONSE C E R C L I S V 1.2

PAGE: 162 RUN DATE: 02/06/87 RUN TIME: 09:25:40

M.2 - COMMENT MAINTENANCE FORM

OTIE: MEINE KEDOGKOED THO	SITE:	METAL	RESOURCES	INC
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EPA ID: TND991279746

COM

NO COMMENT

001 PART A- ON FILE

ACTION	
_	

#### TENNESSEE DEPARTMENT OF HEALTH AND ENVIRONMENT

#### OFFICE CORRESPONDENCE

DATE:

June 14, 1984

TO:

THE FILES

FROM:

Kenneth R. Davis

SUBJECT: §3012 Program - Site Investigations

Metal Resources, Incorporated

FROM	то	DATE
	1	

#### METAL RESOURCES, INCORPORATED

On June 8, 1984, Metal Resources, Incorporated of Loudon, Tennessee was visited by Karen Bonner and Ken Davis. Mr. Marty Hertzel, President of Metal Resources, was contacted prior to the inspection in order to obtain permission to enter the site. During the visit we met with Mrs. Pat Hertzel, Secretary, Mr. Freeman Russel, Plant Supervisor, and Mr.Luther James, Shift Supervisor.

Metal Resources refines scrap aluminum. On-site operations did not begin until 1981. Before Metal Resources' refinery was built, the land was undeveloped farm and forest land.

Because of the relatively recent start date of Metal Resources and the lack of a past history of development, this site does not fall under the regulation of the §3012 Program. No attempt was made to inspect the refinery or the surrounding grounds.

Based on this inspection, it is felt that NO FURTHER ACTION is required under the §3012 Program.

KRD/tad

FROM	DATE
TO	
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	<del>                                     </del>

## POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

I. IDENTIFICATION
OF STATE OF SITE NUMBER
TN 0991279740

PART 1	- SITE LOCATION AND INSP		ATION TA	<u> </u>
II. SITE NAME AND LOCATION  CLISITE NAME LEAR LORMON OF DESCRIVE NAME OF SUB-	loss	2555 20VIEWO 00 50		
	Incorporated Blo		ecific location identifier and ustrial Pari	k/u.s.11
Loudon	TA	1 37774		105 Q2
35 44 40.8 084 L9 20	A PRIVATE B.		☐ C. STATE ☐ D. COUNTY	
III. INSPECTION INFORMATION OF DATE OF INSPECTION   1 02 SITE STATUS	03 YEARS OF OPERATION			
6/8/84 ZACTIVE INACTIVE	198		UNKNOWN	
U4 AGENO: PERFORMING INSPECTION UTSECT AND INDIVIDUAL TO BE SEPA CONTRACTOR	Name of tirms		JNICIPAL CONTRACTOR	Name of firm)
XE. STATE IF STATE CONTRACTOR	Name of firms	OTHER	Specifyi	
Ken Davis	Geola Geola	cqist I	Tenn Dept. Health + Environ	165741-628
рэотнея inspectors Karen Bonne	er Chen	ogist I ist I	TEAN DEPT HEALTHY ENVIROR	12 TELEPHONE NO. 1615) 741-628
				( )
				( )
-	-	•	·	( )
	4			( )
Mr. Freeman Russel	14 TITLE Plant Supervisor	15ADGRESS Metal	Resources	16 TELEPHONE NO 16.151458-200
Mr. Luther James	Supervisor Shift Supervisor		Resources	(615) 458-200
Mrs. Pat Hertzel	Secretary		Resources	16151458-200
				( )
Site Inspection (	Completed-	No Furt	ther Action	( )
	/			( )
and the second process of the second process	2.4 (2.4)			
17 ACCESS GAINED BY 18 TIME OF INSPECTION CHEEK ONE).  X PERMISSION  T WARRANT  12:00 000	19 WEATHER CONDITIONS	ny, No Win	d Present	
IV. INFORMATION AVAILABLE FROM				
Mr. Marty Hertzel	020F Agency Organizationi Metal Re	sources, I	-	03 TELEPHONE NO. (G15) 458-200 7
Renneth R. Davi	T- N 1	RGANIZATION  S. W.M.	07 TELEPHONE NO. (615)741-6287	08 0ATE
EPA FORM 2070-13 (7-81)	and the second s	and the second second	e dans see to the contract of the second of	

#### POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 2 - WASTE INFORMATION

	IFICATION
J STATE	02 SITE NUMBER 19919 7974/

II WASTES	TATES, QUANTITIES, AN	D CHARACTER	STICS			<del></del>		
	TATES Check at that apply	02 WASTE QUANT		03 WASTE CHARACT	ERISTICS Check an inat as	30IYI	<del></del>	
		Measures o	t waste quantities independenti	LIA TOXIC DE SOLUBLE DI HIGHLY VOLATILE				
L A SOUD B POWDE	E SLUARY R FINES _ F LIQUID			B. CORRO	SIVE _ F INFEC	TIOUS I J. EXPLOS	SIVE .	
_ C SLUDGE	∃ G. GAS	CUBIC YARDS		_ O PERSIS	CTIVE _ G FLAMI TENT _ I H IGNITA	ABLE LINCOM	PATIBLE	
_ D OTHER	(Specify)	NO OF DRUMS				M. NOT AF	PPLICABLE	
III. WASTE T	YPE	<u> </u>	<del></del>	<u> </u>			· · · · · · · · · · · · · · · · · · ·	
CATEGORY	SUBSTANCE N	AME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS			
SLU	SLUDGE							
OFM	OILY WASTE							
SQL	SOLVENTS						·	
PSD	PESTICIDES	<del></del>				<del></del>	<del></del>	
occ	OTHER ORGANIC CH	HEMICALS		<del></del>			<del></del>	
IOC	INORGANIC CHEMIC	ALS	<del> </del>				· · · · · · · · · · · · · · · · · · ·	
ACD	ACIDS	<del></del>				<del></del>		
BAS	BASES			<del></del>				
MES	HEAVY METALS		<del>                                     </del>			<del></del>		
IV. HAZARDI	OUS SUBSTANCES SON AG	pendix for most frequent	ly cited CAS Numbers	<del></del>	L	<del></del>		
01 CATEGORY	02 SUBSTANCE N		03 CAS NUMBER	04 STORAGE DIS	POSAL METHOD	05 CONCENTRATION	C6 MEASURE OF CONCENTRATION	
		<del></del>	<del> </del>		<del></del>		GONGE	
	· <del></del>							
	<del></del>							
· · · · ·	<del></del>		<b></b>		<del></del>		<del> </del>	
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		<del></del>						
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	<del></del>		<del> </del>	<u> </u>		<del> </del>		
	<del></del>						<del> </del>	
				<del></del>				
	<del></del>	<del></del>			<del></del>		<u> </u>	
						<del></del>		
	<del></del>		ļ					
		<del></del>						
	CKS (See Appendix for CAS Number	prži		· ·				
CATEGORY	01 FEEDSTOCK	KNAME	02 CAS NUMBER	CATEGORY	01 FEEDSTO	OCK NAME	02 CAS NUMBER	
FOS				FDS				
FDS				FDS				
FDS				FDS				
FDS				FDS				
VI. SOURCES	OF INFORMATION Cites	specific references, e.g.,	stare files, sample anervsis, r	eports)				
							[	
							(	

## POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

OI STATE OF SITE NUMBER

TN D991279746

HAZARDOUS CONDITIONS AND INCIDENTS	40 = 000000000 to 4TC	~ ^^~	
1 A. GROUNDWATER CONTAMINATION 3 POPULATION POTENTIALLY AFFECTED:	02 OBSERVED (DATE	POTENTIAL	I ALLEGED
B. SURFACE WATER CONTAMINATION POPULATION POTENTIALLY AFFECTED	02 TOBSERVED (DATE	POTENTIAL	I ALLEGED
C CONTAMINATION OF AIR POPULATION POTENTIALLY AFFECTED.	02 TOBSERVED IDATE:	POTENTIAL	T ALLEGED
			·
☐ D. FIRE/EXPLOSIVE CONDITIONS POPULATION POTENTIALLY AFFECTED:	02 C OBSERVED (DATE:	)   POTENTIAL	C ALLEGED
E. DIRECT CONTACT POPULATION POTENTIALLY AFFECTED:	02 OBSERVED (DATE	) POTENTIAL	I ALLEGED
· ***	Ta.		
C F CONTAMINATION OF SOIL  AREA POTENTIALLY AFFECTED: (Acres)	02 TOBSERVED (DATE:04 NARRATIVE DESCRIPTION	) Z POTENTIAL	_ ALLEGED
G. DRINKING WATER CONTAMINATION	02 TOBSERVED (DATE:	) POTENTIAL	_ ALLEGED
POPULATION POTENTIALLY AFFECTED:			T verrace
☐ H. WORKER EXPOSURE INJURY	02 C OBSERVED (DATE:		Z ALLEGED
	en en tra		
Special Control of the Control of th			
2 I. POPULATION EXPOSURE/INJURY POPULATION POTENTIALLY AFFECTED.	02 C OBSERVED (DATE:	)   ☐ POTENTIAL	C ALLEGED
	A CONTRACTOR OF THE CONTRACTOR	and the second second	

## POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

I. IDENTIFICATION

O1 STATE O2 SITE NUMBER

TN D99/279746

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

II. HAZARDOUS CONDITIONS AND INCIDENTS Controlled			
01 I J. DAMAGE TO FLORA 04 NARRATIVE DESCRIPTION	02 TOBSERVED (DATE)	I POTENTIAL	ALLEGED
01 T.K. DAMAGE TO FAUNA 04 NARRATIVE DESCRIPTION include numbers: 3/ species:	02 C OBSERVED (DATE)	I POTENTIAL	I ALLEGED
01 IL CONTAMINATION OF FOOD CHAIN 04 NARRATIVE DESCRIPTION	02 TOBSERVED (DATE)	_ POTENTIAL	I ALLEGED
01 TM. UNSTABLE CONTAINMENT OF WASTES Spale: Plunoff Standard requires. Leaking drums; 03 POPULATION POTENTIALLY AFFECTED:	02 T OBSERVED (DATE:) 04 NARRATIVE DESCRIPTION	□ POTENTIAL	□ ALLEGED
01 T N. DAMAGE TO OFFSITE PROPERTY 04 NARRATIVE DESCRIPTION	02 _ OBSERVED (DATE:)	☐ POTENTIAL	_ ALLEGED
•			
01 _ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs 04 NARRATIVE DESCRIPTION	02 TOBSERVED (DATE)	I POTENTIAL	T ALLEGED
01 T P ILLEGALIUNAUTHORIZED DUMPING 04 NARRATIVE DESCRIPTION	02 TOBSERVED (DATE)	□ POTENTIAL	I ALLEGED
05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEC	GED HAZARDS		
III. TOTAL POPULATION POTENTIALLY AFFECTED:			
IV. COMMENTS			
			, · · ·
	<u> </u>		
V. SOURCES OF INFORMATION (Cite specific references, e.g., state files,	samole analysia. (eports)		
		<u>, , , , , , , , , , , , , , , , , , , </u>	
TRACTOR STATE OF THE STATE OF T	gartair an an an an an an an an an an an an an	n en en en en en en en en en en en en en	n og vertigere. Species og sterker

## POTENTIAL HAZARDOUS WASTE SITE

I. IDENT	TFICATION
OI STATE	02 SITE NUMBER
ーナル	N 99 197974/

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VETA	SITE INSPECTION PART 4 - PERMIT AND DESCRIPTIVE INFORMATION				ION	IN 1991279746	
II. PERMIT INFORMATION							
D1 TYPE OF PERMIT ISSUED	02 PERMIT NUMBER	03 DATE:	SSUED	04 EXPIRATION DATE	05 COMMENTS		
Check all that apply)							
TA NPDES		+	<del> ,</del>				
I B. UIC		+					
					<u> </u>		
I D. RCRA		<del> </del>					
TF SPCC PLAN	<del></del>	<del></del>					
G. STATE. Specify							
I H. LOCAL Saecity		+				<del></del>	
II. OTHER Specify.		<del></del>				<del></del>	
IJ. NONE	<del></del>						
III. SITE DESCRIPTION							
01 STORAGE/DISPOSAL -Check art that apply)	02 AMOUNT 03 UNIT OF	F MEASURE	J4 TR	EATMENT (Check as mar a	Ophy)	05 OTHER	
I A. SURFACE IMPOUNDMENT	•			•			
☐ B. PILES				INCENERATION UNDERGROUND INJE	CTION	A. BUILDINGS ON SITE	
Z C. DRUMS, ABOVE GROUND				CHEMICAL/PHYSICA			
_ D. TANK, ABOVE GROUND				BIOLOGICAL	_	-	
I E. TANK, BELOW GROUND	<del></del>		□ E.\	WASTE OIL PROCES	SING	06 AREA OF SITE	
I F. LANDFILL	<del></del>			SOLVENT RECOVERY	}		
I G. LANDFARM			☐ G. OTHER RECYCLING/RECOVERY			(Acres)	
			I H.	OTHER	Çif¥!		
Saecityi	·			·			
			••		,		
IV. CONTAINMENT						<del></del>	
01 CONTAINMENT OF WASTES Checkoner  A. ADEQUATE, SECURE	T d MODERATE	- C 1N	٨٥٥٥١١	ATE BOOR	T D INSERT	RE, UNSOUND, DANGEROUS	
_ A. ADEQUATE, SECORE	I B. MODERATE	_ C. IN	ADEGU	ATE, POCR	_ 0. 145500	RE, UNSOUND, DANGEROUS	
02 DESCRIPTION OF DRUMS, DIKING, LINERS, 8	BARRIERS, ETC.						
•							
V. ACCESSIBILITY					-		
01 WASTE EASILY ACCESSIBLE. Tyes	NO.						
02 COMMENTS		-		· Fime	•		
			•			•	
VI. SOURCES OF INFORMATION IC. # 50	eciric references, e.g. state files, samos	e anarysis, redor	73)				
					• •		
		•					
•							

## POTENTIAL HAZARDOUS WASTE SITE

I. IDENTIFICATION

<b>∞</b> ETA	PART 5 - WATER,	TN 099127974C			
II. DRINKING WATER SUPPLY					
01 TYPE OF CRINKING SUPPLY (Check as appreador)		02 STATUS			03 DISTANCE TO SITE
SURFACE	WELL	ENDANGER		MONITORED	
COMMUNITY A. $\square$	8. I	A. 그 D. 그	8. C E. C	G. □ F. □	A(mi) B(mi)
III. GROUNDWATER					
01 GROUNDWATER USE IN VICINITY Check	one:	<del></del>		<del></del>	
I A ONLY SOURCE FOR DRINKING	B. DRINKING     Other sources available     COMMERCIAL, IND     No other water source	STRIAL, PRIGATIO	Limitea otn	ICIAL INDUSTRIAL IRRIGA er sources avenabler	ATION ID. NOT USED, UNUSEABLE
02 POPULATION SERVED BY GROUND WAT	<b>Т</b> ЕЯ		03 DISTANCE TO NE	EAREST DRINKING WATER	WELL(mi)
04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROU	JNDWATER FLOW	06 DEPTH TO AQUIF OF CONCERN	OF AQUIFER	□ YES □ NO
09 DESCRIPTION OF WELLS (including useage.				_(ft)	(gpd)
10 RECHARGE AREA  TYES COMMENTS  TNO			11 DISCHARGE ARE	A MENTS	
2.40	·		_ NO		
IV. SURFACE WATER				· · · · · · · · · · · · · · · · · · ·	
01 SURFACE WATER USE (Check one)  Z. A. RESERVOIR, RECREATION DRINKING WATER SOURCE		. ECONOMICALLY RESOURCES	⊒ С. СОММЕ	ERCIAL, INDUSTRIAL	☐ D. NOT CURRENTLY USED
02 AFFECTED/POTENTIALLY AFFECTED BO	DIES OF WATER				
NAME:				AFFECTED	DISTANCE TO SITE
				=	(mi)
					(mi)
				=	(mi)
V. DEMOGRAPHIC AND PROPERTY	INFORMATION				
01 TOTAL POPULATION WITHIN				02 DISTANCE TO NEAR	EST POPULATION
A B.		C	) MILES OF SITE		(mi)
NO OF PERSONS	NO. OF PERSONS	N N	O OF PERSONS		
03 NUMBER OF BUILDINGS WITHIN TWO (2)	MILES OF SITE		04 DISTANCE TO NE.	AREST OFF-SITE BUILDING	
					(mi)
05 POPULATION WITHIN VICINITY OF SITE IP	rovide narrative description of na	Mure of population within v	iginity of site, e.g., rurel, viii	lage. Jenselv populated urban ar	rea;
					,
			,		

## POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

O: STATE D2 SITE NUMBER

TALE D2 D1 D 70 7 U

	, , , , , , ,						
VI. ENVIRONMENTAL INFORMA							
01 PERMEABILITY OF UNSATURATED Z	ONE CHACK OF	1 <b>0</b> 1					
⊒ A. 10 <sup>-5</sup> – 10-	13 cm/sec	⊒ B. 10±4 + 10±5 cm/sec = 3	C. 10-4-	- 10 <sup>-3</sup> cm sec	REATER THAN	10 <sup>-3</sup> cm:sec	
02 PERMEABILITY OF BEDROCK - Check	an <b>e</b> i						
こ A. IMPERN Less (nan	MEABLE 10 <sup>-3</sup> cm seci	B. RELATIVELY IMPERMEAE	LE IC	RELATIVELY PERMEABLE 10 T 2 = 10 T 4 am sec.		PERMEABLE	
03 DEPTH TO BEDROCK	04 DEPTH C	OF CONTAMINATED SOIL ZONE		05 SCIL off	ſ		
(ft)	]	(ft)					
06 NET PRECIPITATION	07 ONE YEA	AR 24 HOUR RAINFALL	C8 SLOPE		<u> </u>	<del></del>	
(in)	-	(in)	SITES	LOPE OIRECTION OF	SITE SLOPE	TERRAIN AVERA	GE SLOPE
G9 FLOOD POTENTIAL	<del>*</del>	10	<del></del> _				
SITE IS INYEAR FLO	ODPLAIN	_ SITE IS ON BARR	IER ISLAND	, COASTAL HIGH HAZARI	DAREA, RIVERI	NE FLOODWAY	
11 DISTANCE TO WETLANDS 15 acre minum	umi		12 DISTAN	CE TO CRITICAL HABITAT of	endangered species:		
ESTUARINE	•	OTHER		· <del>-</del>	····	. (mi)	
A(mi)	8	(mi)	EN	DANGERED SPECIES:			<del>_</del>
13 LAND USE IN VICINITY							
DISTANCE TO:				2.5.5.4.5.4.5			
COMMERCIALINDUSTR	IAL	RESIDENTIAL AREAS: NATIO FORESTS, OR WILDLIF			AGRICULTUI AG LAND	AG LANDS AG LAND	<b>;</b>
, A(mi)		8	(MI)	Ç	(mi)	O	(mi)
14 DESCRIPTION OF SITE IN RELATION 1	TO SURROUN	DING TOPOGRAPHY		· · · · · · · · · · · · · · · · · · ·			
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				•			
e e e e e e e e e e e e e e e e e e e		and the second second		and the second second	2 5		
VII. SOURCES OF INFORMATION				<del></del>			
				•	•		
e de la distribuica de la companya de la companya de la companya de la companya de la companya de la companya	<u>.</u>	<del>-</del> Company of the second of t					

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## POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PARTS - SAMPLE AND SIELD INFORMATION

1. IDENTIFICATION

1. STATE 02 SITE NUMBER

TN D 991279746

\\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	•	Р	ART 6 - SAMPLE AND FIELD INFORMATION	111071121116		
II. SAMPLES TAKE	N	<del></del>		· · · · · · · · · · · · · · · · · · ·		
SAMPLE TYPE		C1 NUMBER OF SAMPLES TAKEN	C2 SAMPLES SENT TO	03 EST MATED CATE RESULTS AVAILABLE		
GROUNDWATER						
SURFACE WATER	ı					
WASTE						
AIR						
RUNOFF						
SPILL						
SOIL						
VEGETATION						
OTHER						
III. FIELD MEASUR	EMENTS TA	KEN				
01 TYPE 02 COMMENTS						
		*.				
IV. PHOTOGRAPH	S AND MAPS	)				
31 TYPE _ GROUN	ID I AERIAL		02 IN CUSTODY OF Name of organization or individual			
C3 MAPS	34 LCCATION	CFMAPS	name or organization or individual			
I YES I NO						
V. OTHER FIELD DATA COLLECTED Provide narrative descriptions						
			•			
VI. SOURCES OF IN	FORMATIO	N (Cité saecific references e	g., state eles, sample analysis, reports)			

& EPA	POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 7 - OWNER INFORMATION			I. IDENTIF	CATION 2 SITE NUMBER 39912797
II. CURRENT OWNER(S)			PARENT COMPANY 1 340HC3D 41		
Metal Resources	.Inc.	02 0+3 NUMBER	OB NAME		09 D + 6 NUMBER
Metal Resources 3 STREET ACCRESS - , 30. STO. 110 Blair Bend Ind. PK./	P.O. Box 3	04 SIC CODE	10 STREET ADDRESS # 0 30x AFD + etc	;	11 SIC CODE
Loudon	05 31 WIE	37774	12 CITY	13 STATE	14 ZIP CODE
INAME	<u> </u>	02 D+8 NUMBER	08 NAME		C9 D+8 NUMBER
STREET ADDRESS A DI BOX PED # 400		04 SIC CODE	10 STREET ADDRESS 20 des 250 s are	:	1: SIC CODE
S 0.7 ×	G6 STATE	07 ZIP CODE	12 0174	13 STATE	1 & ZIP CODE
IT NAME	•	02 0 - B NUMBER	OB NAME		R3BMUN 8+0 ¢0
3 STREET ADDRESS 0, 30s, 3FD # etc	<del>-</del> :	04 SIC CODE	10 STREET ADDRESS P 0 Box RFD = etc	.;	11SIC CODE
S CITY	06 STATE	07 ZIP CODE	12 GITY	13 STATE	14 ZIP CODE
1 NAME	IAME 02.0		OB NAME	NAME 09	
DB STREET ACCINESS IN C. Box 1950 + His		04 SIC CODE	10 STREET ADDRESS. 20 90s 7F5 = +re	;	1 1 SIC CODE
S C.F≈ N	OB STATE	C7 ZIP CODE	12 GITY	13 STATE	1 4 ZIP CODE
II. PREVIOUS OWNER(S) List most recen	t firsti		IV. REALTY OWNER(S) // application	ust most recent first!	
NAME		C2 D+8 NUMBER	01 NAME		02 D+8 NUMBER
3 STREET ADDRESS (P.O. Box FFD + Mc.)		04 SIC CCDE	O3 STREET ADDRESS (P.O. Box. RFD + HC	1.3	04 SIC CODE
5 CITY	06STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
1 NAME		02 D+8 NUMBER	01 NAME		02 0+8 NUMBER
3 STREET ADDRESS P 9 BOX RFD # MC.		04 SIC CODE	03 STREET ADDRESS P 0. 30x RFD # etc	i	04 SIC CODE
S CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
NAME		02 D+8 NUMBER	O1 NAME		02 D+8 NUMBER
STREET ADDRESS (P O Box. AFD + MC)		04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD P. etc.)		04 SIC CODE
Confidence <del>on</del> parameters on the de-		w January 1	en en en en en en en en en en en en en e	en en gerekken k	· · · · · · · · · · · · · · · · · · ·
SCITY	08 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
SOURCES OF INFORMATION (CIT)			<u> </u>		

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#### POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 8 - OPERATOR INFORMATION

I. IDENT	TIFICATION
CI STATE	02 SITE NUMBER NO. 19 74/

\\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	PART 8 - OPER	ATOR INFORMATION	L1N10491219176
II. CURRENT OPERATOR Provide it differe	nr 'ram owneri	OPERATOR'S PARENT COMP	ANY 1/200HC3DIE1
O1 NAME	02 D + 8 NUMBER	10 NAME	FEBRUA 6+C 11
03 STREET ADDRESS -P 0 Box 3FD # arc	04 SIC CODE	12 STREET ADDRESS PO Box AFD + 4	erc . 13 SIC CODE
05 CITY	06 STATE 07 ZIP CODE	14 CITY	15 STATE 16 ZIP CODE
08 YEARS OF OPERATION 09 NAME OF OWN	NER		
III. PREVIOUS OPERATOR(S) Stimostree	cent first: provide only if aifferent from awneri	PREVIOUS OPERATORS' PAR	ENT COMPANIES IT SECRETARIES
01 NAME	02 D+8 NUMBER	1G NAME	11 D-8 NUMBER
03 STREET ADDRESS P.O. dox, AFO # etc.;	04 SIC CODE	12 STREET AODRESS :P O. Box. RED #	etc.; 13 SIC CODE
	100.071751		
05 CITY	06 STATE O7 ZIP CODE	14 CITY	15 STATE 18 ZIP CODE
	NER DURING THIS PERIOD		
08 YEARS OF OPERATION 09 NAME OF OWN	TEH DURING THIS PERIOD		
01 NAME	102 D+8 NUMBER	10 NAME	11 D+C 11
OTHAME	02.5 + 6 NOMBEA	10 MARIE	11373 NOMBER
O3 STREET ADDRESS P C. BOX. 3FO . NO.		12 STREET ADDRESS = 0. dox. RFD + +	IL ITS SIC CODE
•			
05 CITY	06 STATE 07 ZIP CODE	14 CITY	15 STATE 16 ZIP CODE
	*		-
08 YEARS OF OPERATION 09 NAME OF OWN	NER DURING THIS PERIOD		
OT NAME	02 D+8 NUMBER	10 NAME	11 0+8 NUMBER
G3 STREET ADDRESS (P. O. Box. RED ≠ etc.)	04 SIC CODE	12 STREET ADDRESS (P.O. Box. RFD = +	te. 13 SIC CODE
05 CITY	06 STATE 07 ZIP CODE	14 CITY	15 STATE 16 ZIP CODE
08 YEARS OF OPERATION 09 NAME OF OWN	NER DURING THIS PERIOD		
IV. SOURCES OF INFORMATION (Cite as	pecific references, e.g., state files, sample energy	IRL reports	
		:	
ودهای استان درسان بهری	e so estado de espera	to the same that is a second common than	was any constant with the
and the same of the same of the same	and the second of the second o	and the South Control of the South State of the Sou	ting the second of the second
			in the second of
The second secon	an de Personal de Company de Maria de La Company de La Company de	ибования ибостверине и извести в полити на поделения и стоящения в сего и и село общения в сего и и село общени Нециализати в поделения и извести в поделения в поделения в поделения в село общения в село общения в село общ В поделения в поделения в поделения в поделения в поделения в поделения в поделения в поделения в поделения в	The first section of the contract of the contr
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# POTENTIAL HAZARDOUS WASTE SITE

I. IDENTIFICATION 01 STATE 02 SITE NUMBER

II. ON-SITE GENERATOR					
C1 NAME		02 D+8 NUMBER			
03 STREET ACORESS P.O. Box. AFO + HC		04 SIC CODE			
05 CITY	06 STATE	07 ZIP CODE			
III. OFF-SITE GENERATOR(S)		<u> </u>			
O: NAME	<u>.</u>	02 3+8 NUMBER	01 NAME		02 D+8 NUMBE
C3.5TREET ADDRESS . P 2 90# RFD # 410		04 SIC CODE	03 STREET ADDRESS -P O. Box. AFD	# etc.:	04 SIC CO
05 CITY	OB STATE	07 ZIP CODE	105 CITY	ION STATE	07 ZIP CODE
	00 31712	O7 ZIF GODE	03 (417	0831712	or ar cope
01 NAME		02 D+8 NUMBER	01 NAME		02 D+8 NUMBE
•					
03 STREET ADDRESS (P.O. Box. AFO HE.)		04 SIC CODE	03 STREET ADDRESS (P.O. Box. RFD	P. efG.)	04 SIC CO
	10.00				
05 CITY	OB STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
IV. TRANSPORTER(S)		02 D+8 NUMBER	O1 NAME	<del>,</del>	02 D+8 NUMBE
•	•.				
O3 STREET ADDRESS /2 O Bos. AFO # exc./		04 SIC CODE	03 STREET ADDRESS (> 0. Box. RFD	= stc.)	04 SIC COI
05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
01.1114		02 D+8 NUMBER	01 NAME		02 D+8 NUMBE
01 NAME		OZ DYB NOMBER	OT NAME		02 0 + 5 140 MGC
03 STREET ADDRESS (P. O. Box. AFD + exc.)		04 SIC CODE	03 STREET ADDRESS IP 0 Box. RFO	• etc.;	04 SIC CO
05 CITY	08 STATE	07 ZIP CODE	05 CITY	08 STATE	07 ZIP CODE
V. SOURCES OF INFORMATION G	e specific references.	.g., state files, sample enaivsi	s, reports)		
and the same process of the same of the sa					<b>*-</b>
Company of the Compan		e de la grande de		. • • • • • • • • • • • • • • • • • • •	19 15 <b>2</b> 15 15 15 15 15 15 15 15 15 15 15 15 15
1 . W . N				والمعارض والمراوي والمعارض والمعارض والمستعدد والمستعدد	manan e i ji je sena
and the state of t		يەخىلەردە <del>دەققىڭ بىدۇك يەسىدىدىكى بۇرىيەرى</del> لى بىر ئىنىي <del>لىنىدى</del> بەرگەردەردا	is the professional and professional and the profes	* 2 * * * * * * * * * * * * * * * * * *	ela messa la lar
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				eri i	Me a construction
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and the street of the street of approximation of the		المرشد السيائلة أعام الد		**************************************	re, the to

## POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 10 - PAST RESPONSE ACTIVITIES

1. IDENTIFICATION

O1 STATE 02 SITE NUMBER

TN 109 1279746

ACIA	PART 10 - PAST RESPONSE ACTIVITIES		TNID991274746
II. PAST RESPONSE ACTIVITIES			
01 TA WATER SUPPLY CLOSED 04 DESCRIPTION	02 DATE	03 AGENCY	
01 TB. TEMPORARY WATER SUPPLY PROVIDE 04 DESCRIPTION			
01 T.C. PERMANENT WATER SUPPLY PROVIDE 04 DESCRIPTION	ED 02 DATE	03 AGENCY	
01 I D. SPILLED MATERIAL REMOVED 04 DESCRIPTION	02 DATE	03 AGENCY	
01 TE. CONTAMINATED SOIL REMOVED 04 DESCRIPTION	02 DATE		•
01 T. F. WASTE REPACKAGED 04 DESCRIPTION	02 DATE	03 AGENCY	
01 Z G. WASTE DISPOSED ELSEWHERE 04 DESCRIPTION	02 DATE		
01 TH ON SITE BURIAL 04 DESCRIPTION	O2 DATE	03 AGENCY	
01 TIL IN SITU CHEMICAL TREATMENT 04 DESCRIPTION	02 DATE	YOMADA ED	
01 _ J. N SITU BIOLOGICAL TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY	
01 T.K. IN SITU PHYSICAL TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY	
01 IL ENCAPSULATION 04 DESCRIPTION	02 DATE	03 AGENCY	
01 Z.M. EMERGENCY WASTE TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY	
01 Z N. CUTOFF WALLS 04 DESCRIPTION	02 DATE	03 AGENCY	
01 C O. EMERGENCY DIKING/SURFACE WATER 04 DESCRIPTION	DIVERSION 02 DATE	03 AGENCY	
01 T P CUTOFF TRENCHES/SUMP 04 DESCRIPTION	02 DATE	03 AGENCY	
01 I Q. SUBSURFACE CUTOFF WALL 04 DESCRIPTION	02 DATE	03 AGENCY	

#### POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 10 - PAST RESPONSE ACTIVITIES

1. IDENTIFICATION

O1 STATE 02 SITE NUMBER

TN D 99 1279746

VEIA	PART 10 - PAST RESPONSE ACTIVITIES	L 1 N 1 D 99 12 19 19 C
II PAST RESPONSE ACTIVITIES Continued		
01 I R. BARRIER WALLS CONSTRUCTED 04 DESCRIPTION	02 DATE	03 AGENCY
01 I S. CAPPING COVERING 04 DESCRIPTION	Q2 DATE	03 AGENCY
01 I T BULK TANKAGE REPAIRED 04 DESCRIPTION	02 DATE	03 AGENCY
01 Z U. GROUT CURTAIN CONSTRUCTED 04 DESCRIPTION	02 DATE	03 AGENCY
01 T.V. BOTTOM SEALED 04 DESCRIPTION	02 DATE	' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '
01 TW. GAS CONTROL 04 DESCRIPTION	O2 DATE	03 AGENCY
01 T. FIRE CONTROL 04 DESCRIPTION	O2 DATE	03 AGENCY
01 TY: LEACHATE TREATMENT 04 DESCRIPTION	O2 DATE	
01 T.Z. AREA EVACUATED 04 DESCRIPTION	.•	
01 T 1 ACCESS TO SITE RESTRICTED 04 DESCRIPTION	02 DATE	03 AGENCY
01 Z 2. POPULATION RELOCATED 04 DESCRIPTION	02 OATE	03 AGENCY
01 _ 3. OTHER REMEDIAL ACTIVITIES 04 DESCRIPTION	02 DATE	03 AGENCY

III. SOURCES OF INFORMATION ... Cité soecific references, e.g., state fres, samole analysis, reports



#### POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION

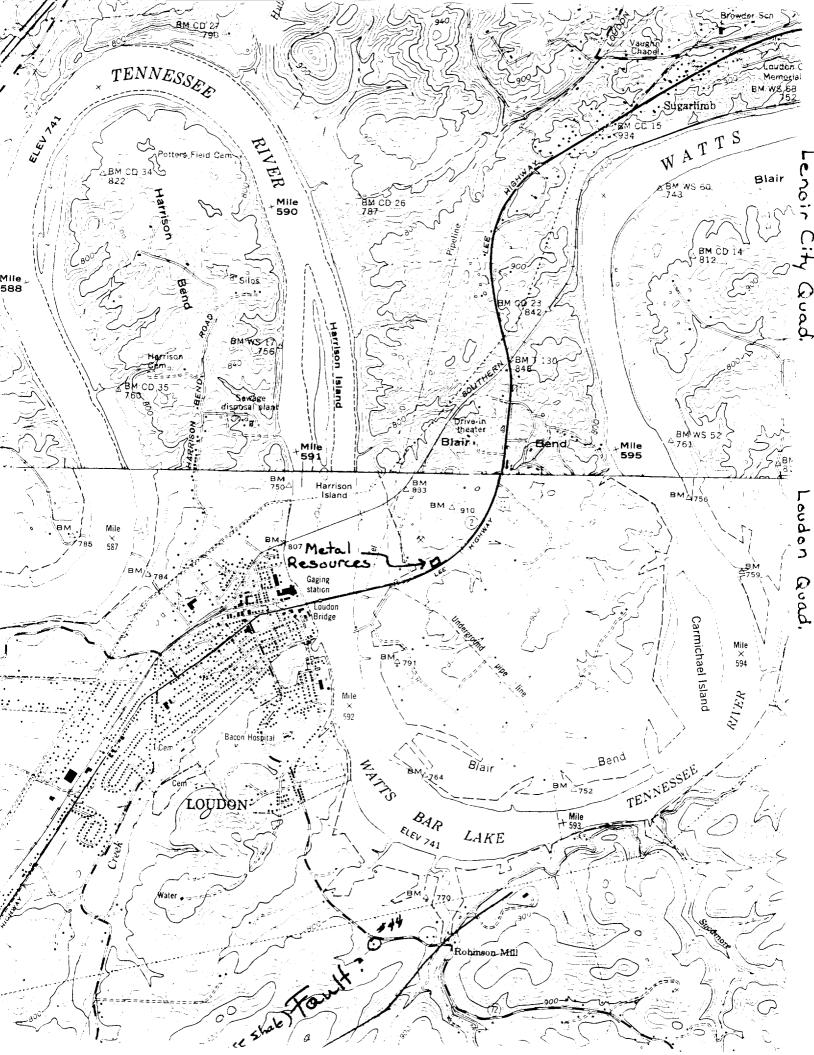
01 STATE 02 SITE NUMBER 79746

IL ENFORCEMENT INFORMATION	
	4

01 PAST REGULATORY/ENFORCEMENT ACTION TIMES TO NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

IIL SOURCES OF INFORMATION (Cite assente references, e.g., state fries, sample analysis, resports)



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# POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT PART 1 - SITE INFORMATION AND ASSESSMENT

	TEICATION	
01 STATE	02 SITE NUMBER	
TIN	THEYAGIA	<b>19146</b>

PA	RT 1 - SITE INFORM	ATION A	ND ASSESSMEN	T	INDIVIDUO (1) 190
II. SITE NAME AND LOCATION			<del></del>		
01 SITE NAME (Legel, common, or descriptive name of site)		02 STRE	ET, ROUTE NO., OR SP	ECIFIC LOCATION IDENTIFIER	·
Metal Resources Inc	,	IPO F	30x 3x6	Blan Bood Swa	estimi Fax
OB CITY		104 STATE	105 ZIP CODE 106	COUNTY	07COUNTY 08 CONG CODE DIST
Loudon		TN	377114 3	Louden	CODE COS.
09 COORDINATES LATITUDE	LONGITUDE				
10 DIRECTIONS TO SITE (Starting from meaning bubble room)	<del></del>				<del> </del>
TO DIRECTIONS TO SITE ISland from market beautiful					
III. RESPONSIBLE PARTIES					
01 OWNER (# Engan)		02 STREE	ET (Business, maing, resig	rritier)	
03 C/TY	<u> </u>	04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER	
07 OPERATOR (If known and different from owner)		OS STREE	ET (Business, making, reside	J. Wredi	<u></u>
09 CITY		10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER	
13 TYPE OF OWNERSHIP (Cheen one)  \( \overline{A} \) PRIVATE \( \overline{B} \) B. FEDERAL: \( \overline{B} \)  \( \overline{A} \) F. OTHER: \( \overline{A} \)	(Agency name)		_ □ C. STATE	□D.COUNTY □ E. MU	NICIPAL
14 OWNER/OPERATOR NOTIFICATION ON FILE (Cheef at the common of the commo	B. UNCONTRO	OLLED WAST	E SITE (CERCLA 103 e)	DATE RECEIVED: MONTH 3	/ C. NONE
	BY (Cheex of that apply)	<del></del>	<del></del>	<del></del>	<del> </del>
I LIYES DATE	☐ A. EPA ☐ B. ! ☐ E. LOCAL HEALTH O				CONTRACTOR
<del></del>	CONTRACTOR NAME(S	١٠		(Specify)	
02 SITE STATUS (Check only)	03 YEARS OF OP				
☐ A. ACTIVE ☐ B. INACTIVE ☐ C. UNKNOV	w _			UNKNOW	N
04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KI	NOWN, OR ALLEGED	BEGINNING Y			
PARE A THE PARE WHO	Jak Charles	1. S. C. J.	-100100 C	They are 1766	generators
on they all man which					
OS DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMEN	IT AND/OR POPULATION				and the second second second second second second second second second second second second second second sec
V. PRIORITY ASSESSMENT					
01 PRIORITY FOR INSPECTION (Cheer one. if high or measure is at	C. LOW	information and P	🗹 D. NONE	we Conditions and incidents)	lakgo formi
VI. INFORMATION AVAILABLE FROM			<del></del>	<del></del>	
D1 CONTACT	02 OF (Agency: Org	and short	<del></del>		03 TELEPHONE NUMBER
04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORG	ANIZATION	07 TELEPHONE NUMBER	OS DATE
Lyn on things	1 ( Can ( C V	1		一切した はっしょうど	MONTH DAY YEAD



# POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT PART 2 - WASTE INFORMATION

	THOATION
C1 STATE	02 SITE NUMBER
TN	02 SITE NUMBER THING STEIN STEIN

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS							
01 PHYSICAL STATES (Check of that apply) 02 WASTE QUANTITY AT SITE				03 WASTE CHARACTERISTICS (Chock of that apply)			
		rasie quentites noccencenti	□ A TOXIC □ E. SOLUBLE		BLE CIHIGHLY	VOLATILE	
C B POWDER, FINES C F LIQUID C SLUDGE C G. GAS		TONS		☐ 8 CORROSIVE ☐ F INFECTIOUS ☐ J EXPLOSIVE			NAE
		ł		C C. RADIO			
CUBIC YARDS		CUBIC YARDS		20.72733		M NOT AS	
(Seccity) NO. OF DRUMS				<u></u>			
III. WASTE T	YPE						
CATEGORY	SUBSTANCE N	AME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS		
SLU	SLUDGE						
OLW	OILY WASTE						
SOL	SOLVENTS						
PSD	PESTICIDES						
occ	OTHER ORGANIC CH	IEMICALS				······································	
ЮС	INORGANIC CHEMIC	ALS					
ACD	ACIDS						
BAS	BASES	<del></del>					
MES	HEAVY METALS		1	<del> </del>			
IV. HAZARD	OUS SUBSTANCES (See A)	seenau for most treewen	ty cano CAS Mummores	<del></del>	<u> </u>		
D1 CATEGORY	02 SUBSTANCE N		03 CAS NUMBER	04 STORAGE/DIS	POSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
				<del> </del>			CONCENTRATION
<del></del>	<u></u>		<del> </del>			<u> </u>	
			<u> </u>	<del> </del>			
		<del></del>		<del> </del>			L
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	·		<u> </u>	<u> </u>			
7							
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V FEFDSTO	CKS (See Appendix for CAS Number		<u> </u>	<del> </del>		<del></del>	·
CATEGORY	·		02 CAS NUMBER	CATEGORY	01 FEEDSTO	Ser mans	22.242.11.11.12.1
	0115553100	N NAME	UZ CAS NOMBER	<del> </del>	OT FEEDSTO	Ch NAME	02 CAS NUMBER
FDS				FDS			
FDS			<del> </del>	FOS			
FDS			ļ	FOS			
FDS			<u> </u>	FDS			
VI. SOURCE	S OF INFORMATION 1C40	toocite references, e.g.	, Slare Mee, sample analysis.	геропа (		<del></del>	
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## POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

TALTALD TOLIZ TO THE

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

II. HAZARDOUS CONDITIONS AND INCIDENTS			
01 C A. GROUNDWATER CONTAMINATION	02 C OBSERVED (DATE.	C POTENTIAL	ALLEGED
03 POPULATION POTENTIALLY AFFECTED:	,	Crotetime	~ ~~~~~~~
OS FOFOSKIONEFO (ENTREE) RIT COTES.	an water pedominor		
01 C B. SURFACE WATER CONTAMINATION	02 C OBSERVED (DATE)	☐ POTENTIAL	☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED:	04 NARRATIVE DESCRIPTION		
01 C. CONTAMINATION OF AIR	02 C 00550/50 (0.475	~	C 41.5050
03 POPULATION POTENTIALLY AFFECTED:	02 C OBSERVED (DATE:) 04 NARRATIVE DESCRIPTION	T POTENTIAL	C ALLEGED
OUT OF OLD HONFO TENTIALET ATTEOTES.	04 MANUALIAE DESCRIPTION		
01 T. D. FIRE/EXPLOSIVE CONDITIONS	02 G OBSERVED (DATE:)	E POTENTIAL	C ALLEGED
03 POPULATION POTENTIALLY AFFECTED:	04 NARRATIVE DESCRIPTION		
•			
01 Z E. DIRECT CONTACT	02 C OBSERVED (DATE:	POTENTIAL	ALLEGED
03 POPULATION POTENTIALLY AFFECTED:	02 C OBSERVED (DATE:) 04 NARRATIVE DESCRIPTION	L POTENTIAL	- ALLEGED
OST OF OBATION POTENTIALET ATT COTES:	04 MANATITE DESCRIPTION		
<b>.</b>			
•	•		
01 C F. CONTAMINATION OF SOIL	02 C OBSERVED (DATE)	□ POTENTIAL	☐ ALLEGED
03 AREA POTENTIALLY AFFECTED:	04 NARRATIVE DESCRIPTION		
(Acres)			
7			
·			
01 C G. DRINKING WATER CONTAMINATION	AS C ORCEDIED (DATE	COSTENIZIA	C ALLEGED
03 POPULATION POTENTIALLY AFFECTED.	02 C OBSERVED (DATE) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED
OS POPOSATION OTCHNICE NO COTES.	O4 MARKATIVE DESCRIPTION		
01 TH. WORKER EXPOSURE/INJURY	02 C OBSERVED (DATE:)	C POTENTIAL	C ALLEGED
03 WORKERS POTENTIALLY AFFECTED:	04 NARRATIVE DESCRIPTION		
	•		
C1 C I. POPULATION EXPOSURE/INJURY	02 D OBSERVED (DATE.	POTENTIAL	ALLEGED
03 POPULATION POTENTIALLY AFFECTED:	04 NARRATIVE DESCRIPTION	_ FOIEINIAL	- ALLEGED
	2		
<u> </u>			
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## POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

1.	I. IDENTIFICATION						
01	STATE	02	SITE NUMBER				
1	-1761		AIDCKI'Z	79 nd/			

II. HAZARDOUS CONDITIONS AND INCIDENTS (Commund)		·	
01 D J. DAMAGE TO FLORA 04 NARRATIVE DESCRIPTION	02 OBSERVED (DATE)	D POTENTIAL	C ALLEGED
01 C K. DAMAGE TO FAUNA 04 NARRATIVE DESCRIPTION (Include name(s) of species)	02 G OBSERVED (DATE)	☐ POTENTIAL	☐ ALLEGED
01 ☐ L CONTAMINATION OF FOOD CHAIN 04 NARRATIVE DESCRIPTION	02 OBSERVED (DATE:)	☐ POTENTIAL	□ ALLEGED
01  M. UNSTABLE CONTAINMENT OF WASTES (Solder/unoit/standing squide/leasing drume) 03 POPULATION POTENTIALLY AFFECTED:	02 OBSERVED (DATE:) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	□ ALLEGED
01 IN DAMAGE TO OFFSITE PROPERTY 04 NARRATIVE DESCRIPTION	02 OBSERVED (DATE:)	□ POTENTIAL	☐ ALLEGED
01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs 04 NARRATIVE DESCRIPTION	02 C OBSERVED (DATE:)	☐ POTENTIAL	C ALLEGED
01 © P. ILLEGAL/UNAUTHORIZED DUMPING 04 NARRATIVE DESCRIPTION	02 □ OBSERVED (DATE:)	□ POTENTIAL	C ALLEGED
05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEG	GED HAZARDS	<del></del>	
III. TOTAL POPULATION POTENTIALLY AFFECTED:			
IV. COMMENTS			
V. SOURCES OF INFORMATION (Cité apecida reverences, e. g., state mes. s	semple energia, reportal		

# POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT

I. IDENTIFICATION
OF STATE OF SITE NUMBER
TN TNB991279746

PART	1 - SITE INFORM	ATION A	ND ASSESSME	NT TN	TNOGGISTGTH
II. SITE NAME AND LOCATION			<del></del>	<del></del>	· · · · · · · · · · · · · · · · · · ·
01 SITE NAME (Legal, common, or descriptive name or are)		02 STREE	ET, ROUTE NO., OR S	PECIFIC LOCATION IDENTIFIER	
Metal Resources Inc	<del></del>	PO.P	xx 386	Blan Ford Sxa	custual Park
Joudon			37774	Loudon	OF CODE DIST
09 COORDINATES LATITUDE LO	NGITUDE				
10 DIRECTIONS TO SITE (Starting from nearest public road)	<del></del>				
					•
IIL RESPONSIBLE PARTIES					•
01 OWNER (# anown)		02 STREE	T (Buttmess, mening, res	Contract .	,
03 CITY		04 STATE	05 ZIP CODE	OS TELEPHONE NUMBER	,
		<u> </u>		( )	•
07 OPERATOR (If known and different from owner)		OB STREE	T (Business, making, res	dermen .	
09 CITY		10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER	`
13 TYPE OF OWNERSHIP (Check one)		<u></u>	<u> </u>		<del></del>
Ø A. PRIVATE □ B. FEDERAL:	(Agency name)		_ C. STATE	DD.COUNTY DE.M	UNICIPAL
F. OTHER:			_ G. UNKNO	own .	
(\$000) 14 OWNER/OPERATOR NOTIFICATION ON FILE (Check at that seek)	***				
	B. UNCONTROL	LED WAST	E SITE (CERCLA 103 d	DATE RECEIVED:	C. NONE
IV. CHARACTERIZATION OF POTENTIAL HAZARD					. '.
01 ON SITE INSPECTION BY ICA	neon of that easy)				
☐ YES DATE ☐ A. ☐ DAY YEAR ☐ E.		A CONTRA		S. STATE D. OTHE	R CONTRACTOR
□ NO MONTH DAY YEAR □ E.	LOCAL HEALTH OFF	ICIAL L	Jr. Olnen:	(Specify)	
	TRACTOR NAME(S):				
OZ SITE STATUS (Check one)	03 YEARS OF OPER	RATION	İ	<b>—</b>	•
A. ACTIVE B. INACTIVE C. UNKNOWN		BEGINNING YE	AR ENDING Y	EAR UNKNOV	VN
04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOW	N. OR ALLEGED		8/11/50	2604 244 001	single tors
Dout 1) has then withd	noun a	o al	2/11/22	Skilly and the	gordian
ob therefore waste					
05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND	D/OR POPULATION	<del></del>	<del></del>		6.
					•
					·
V. PRIORITY ASSESSMENT					
01 PRIORITY FOR INSPECTION (Check one. if high at medium is phoched.  A. HIGH (Inspection required promisity)  B. MEDIUM (Inspection required promisity)	C. LOW		D. NONE (Me human	rous Consident and Incidents: recisen needed, complete current diaps	samon forms
VI. INFORMATION AVAILABLE FROM	<del> </del>				
01 CONTACT	02 OF (Agency-Organ	(2000)			03'TELEPHONE NUMBER
	1				( )
04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORGA	INIZATION	07 TELEPHONE NUMBER	08 DATE
Laur Henries	DSWM			16151741-6287	MONTH DAY YEAR

# POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT PART 2 - WASTE INFORMATION

1. IDENTIFICATION

DI STATE DE SITE NUMBER

TN TNO991279746

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS O1 PHYSICAL STATES (Check all that appro) 02 WASTE QUANTITY AT SITE 03 WASTE CHARACTERISTICS (Check of their apply) (Messures of waste quanti must be independent) ☐ I HIGHLY VOLATILE ☐ J EXPLOSIVE ☐ K REACTIVE ☐ E. SOLUBLE ☐ F INFECTIOUS ☐ G FLAMMABLE C A SOUD DE SLURRY A TOXIC C 8 CORROSIVE S B. POWDER, FINES F LOUID TONS \_\_\_ C SLUDGE G GAS D. PERSISTENT C H IGNITABLE 🗆 L INCOMPATIBLE CUBIC YARDS . M NOT APPLICABLE D. OTHER \_ (Seecey) NO OF DRUMS III. WASTE TYPE CATEGORY SUBSTANCE NAME 01 GROSS AMOUNT | 02 UNIT OF MEASURE | 03 COMMENTS SLUDGE SLU OILY WASTE OLW SOL SOLVENTS PSD PESTICIDES occ OTHER ORGANIC CHEMICALS 100 **INORGANIC CHEMICALS** ACD ACIDS BASES BAS HEAVY METALS MES IV. HAZARDOUS SUBSTANCES (See Assense for most frequency cased CAS Numbers) 06 MEASURE OF O1 CATEGORY 02 SUBSTANCE NAME 03 CAS NUMBER 04 STORAGE/DISPOSAL METHOD 05 CONCENTRATION V. FEEDSTOCKS (See Appendix for CAS Numbers CATEGORY 01 FEEDSTOCK NAME 02 CAS NUMBER CATEGORY 01 FEEDSTOCK NAME 02 CAS NUMBER FDS FDS FDS FD\$ FDS FOS FDS FDS VI. SOURCES OF INFORMATION (Cité appende references), 6 g., 1609 Mel. 25/1008 analysis, reports 1 . Part A application

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## POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT

I.	IDEN'	TIFICAT	ION	
01	STATE	02 SITE	NUMBER	
- 1	T . I	מעדו	9917	19746

PART 3 - DESCRIPTION	OF HAZARDOUS CONDITIONS AND INCID	DENTS	121114
II. HAZARDOUS CONDITIONS AND INCIDENTS			
01 E A. GROUNDWATER CONTAMINATION	02 C OBSERVED (DATE:	.) C POTENTIAL	☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED:	04 NARRATIVE DESCRIPTION		•*
			•
			•.
01 C B. SURFACE WATER CONTAMINATION 03 POPULATION POTENTIALLY AFFECTED:	02 □ OBSERVED (DATE. 04 NARRATIVE DESCRIPTION	.) DOTENTIAL	C ALLEGED
US POPUDATION POTENTIALLY APPEOTED.	OF NARRATIVE DESCRIPTION		
01 🗇 C. CONTAMINATION OF AIR 03 POPULATION POTENTIALLY AFFECTED:	02 C OBSERVED (DATE:	) DOTENTIAL	☐ ALLEGED
	<del>-</del> -		
		•	
		•	•
01 D. FIRE/EXPLOSIVE CONDITIONS	02 OBSERVED (DATE:	.) □ POTENTIAL	☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED:		.) L FOTENTIAL	C ACCEPTED
		,	
			•
01 G E. DIRECT CONTACT	02 G OBSERVED (DATE:	) [ POTENTIAL	ALLEGED
03 POPULATION POTENTIALLY AFFECTED:	04 NARRATIVE DESCRIPTION		•
			•
		•	
	·		
01 E F. CONTAMINATION OF SOIL	02 G OBSERVED (DATE.	) DOTENTIAL	_ ALLEGED
03 AREA POTENTIALLY AFFECTED:	04 NARRATIVE DESCRIPTION		
			•
7			•
71	<del></del>		
01 C. G. DRINKING WATER CONTAMINATION 03 POPULATION POTENTIALLY AFFECTED.	02 C OBSERVED (DATE	) □ POTENTIAL	C ALLEGED
		•	
			•
01 3 H WORKER EXPOSURE/INJURY	03 5 09059/50 (0475	COTTAIN A	T: ALL COED
03 WORKERS POTENTIALLY AFFECTED:	02 G OBSERVED (DATE:	) DOTENTIAL	C ALLEGED
			•
01 C I. POPULATION EXPOSURE/INJURY	02 C OBSERVED (DATE	POTENTIAL	G ALLEGED
03 POPULATION POTENTIALLY AFFECTED:		- · · · · <del>-</del>	. •
			*
			•

# POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

7M TNO991279146

I. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)			41 3
01 🗇 J. DAMAGE TO FLORA 04 NARRATIVE DESCRIPTION	02 - OBSERVED (DATE:	.) DOTENTIAL	□ ALEGED
01 □ K. DAMAGE TO FAUNA	02 OBSERVED (DATE:	)   POTENTIAL	□-ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of special)	UZ LI UBSERVED (UATE:	.) poleniac	L'ALEGED
01 □ L CONTAMINATION OF FOOD CHAIN 04 NARRATIVE DESCRIPTION	02 OBSERVED (DATE.	.)   POTENTIAL	□ ALLEGED
01 G M. UNSTABLE CONTAINMENT OF WASTES	02 C OBSERVED (DATE:	) D POTENTIAL	□ ALLEGED
(Spiterunof/standing injuris/seating online) 03 POPULATION POTENTIALLY AFFECTED:	04 NARRATIVE DESCRIPTION		
01 C N. DAMAGE TO OFFSITE PROPERTY 04 NARRATIVE DESCRIPTION	02 OBSERVED (DATE:	) D POTENTIAL	C ALLEGED .
	•		
01 0. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPS 04 NARRATIVE DESCRIPTION	02 C OBSERVED (DATE:	) POTENTIAL	□ ALLEGED
01 D. P. ILLEGAL/UNAUTHORIZED DUMPING 04 NARRATIVE DESCRIPTION	02 C OBSERVED (DATE:	) DOTENTIAL	C ALLEGED
05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL OR ALLEG	ED HAZAROS		•
I. TOTAL POPULATION POTENTIALLY AFFECTED:			
/. COMMENTS			
. SOURCES OF INFORMATION (Cité abounte reverances, e. g., state mes. s.	emole energia, record)		



CE . Environmental Science Services Administration . Environmental Data Service



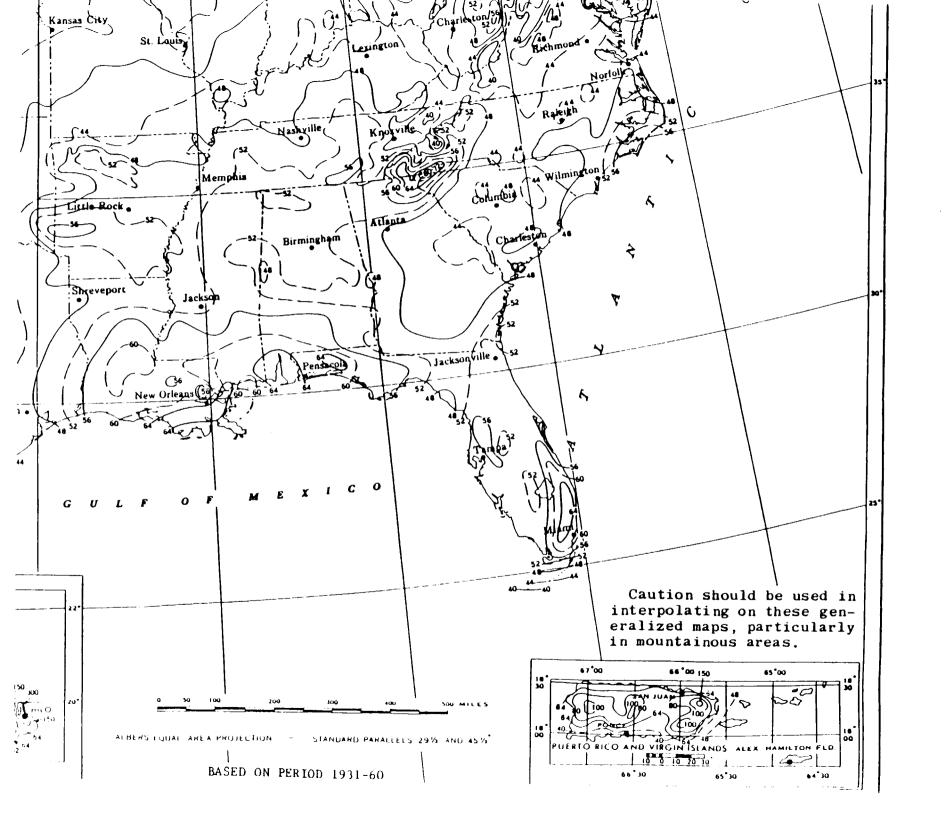
### U.S. DEPARTMENT OF COMMERCE C. R. Smith, Secretary

ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION Robert M. White, Administrator

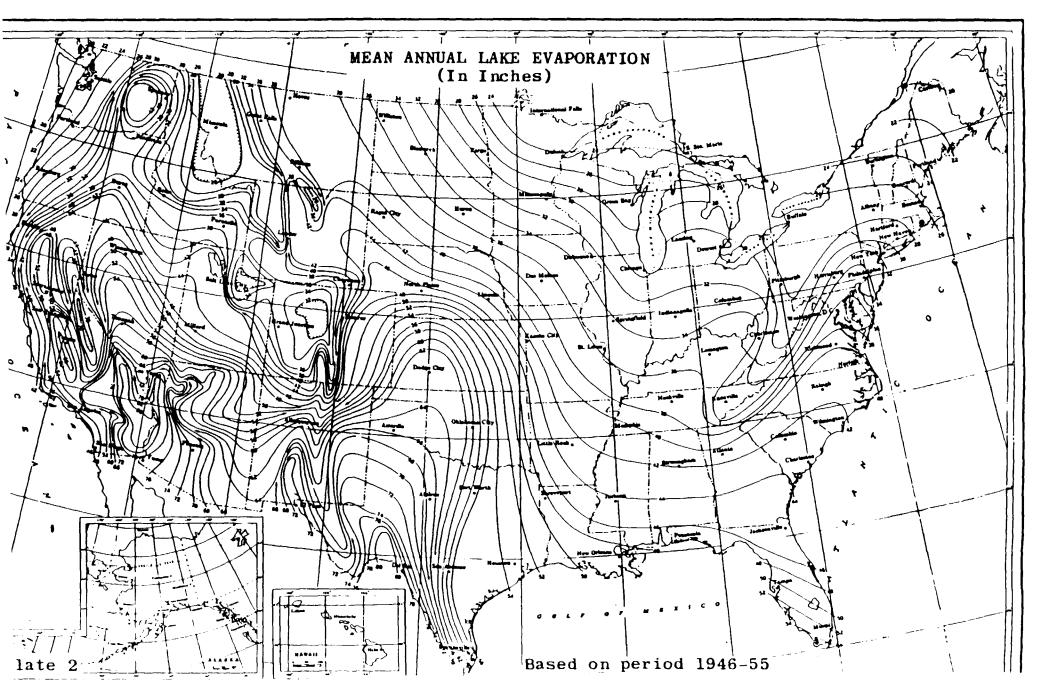
ENVIRONMENTAL DATA SERVICE Woodrow C. Jacobs, Director

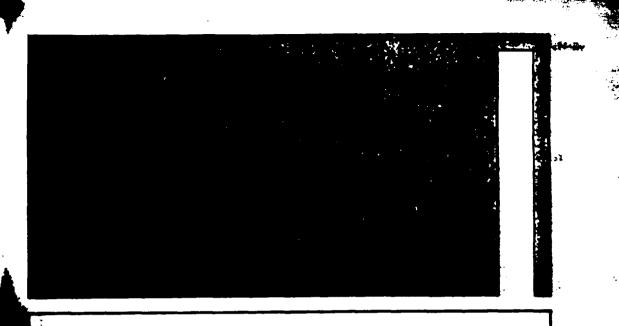
#### **JUNE 1968**

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NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
1983



## KE EVAPORATION





# R. Allan Freeze

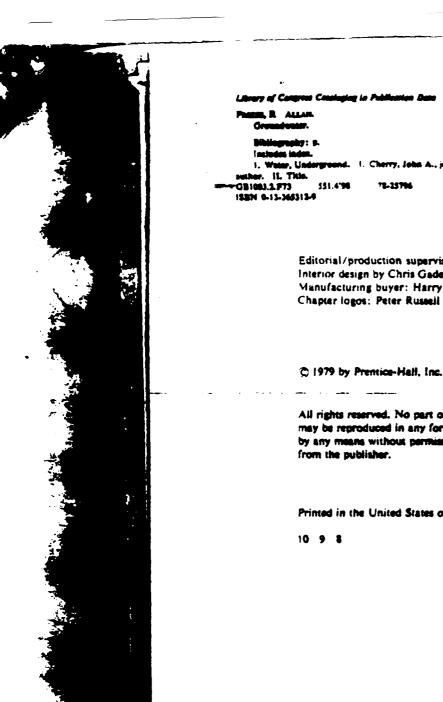
Department of Geological Sciences
University of British Columbia
Vencouver, British Columbia

# John A. Cherry

Department of Earth Sciences University of Weterloo Weterloo, Ontario

GROUNDWATER

Prentice-Hall, Inc.



I. Cherry, John A., joint

Editorial/production supervision by Cathy Brenn/Kim McNeily Interior design by Chris Gadekar Manufacturing buyer: Harry Baisley

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Table 2.2 Range of Values of Hydraulic Conductivity and Permeability

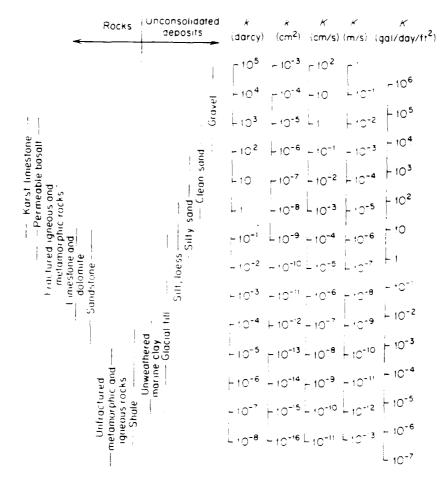


Table 2.3 Conversion Factors for Permeability and Hydraulic Conductivity Units

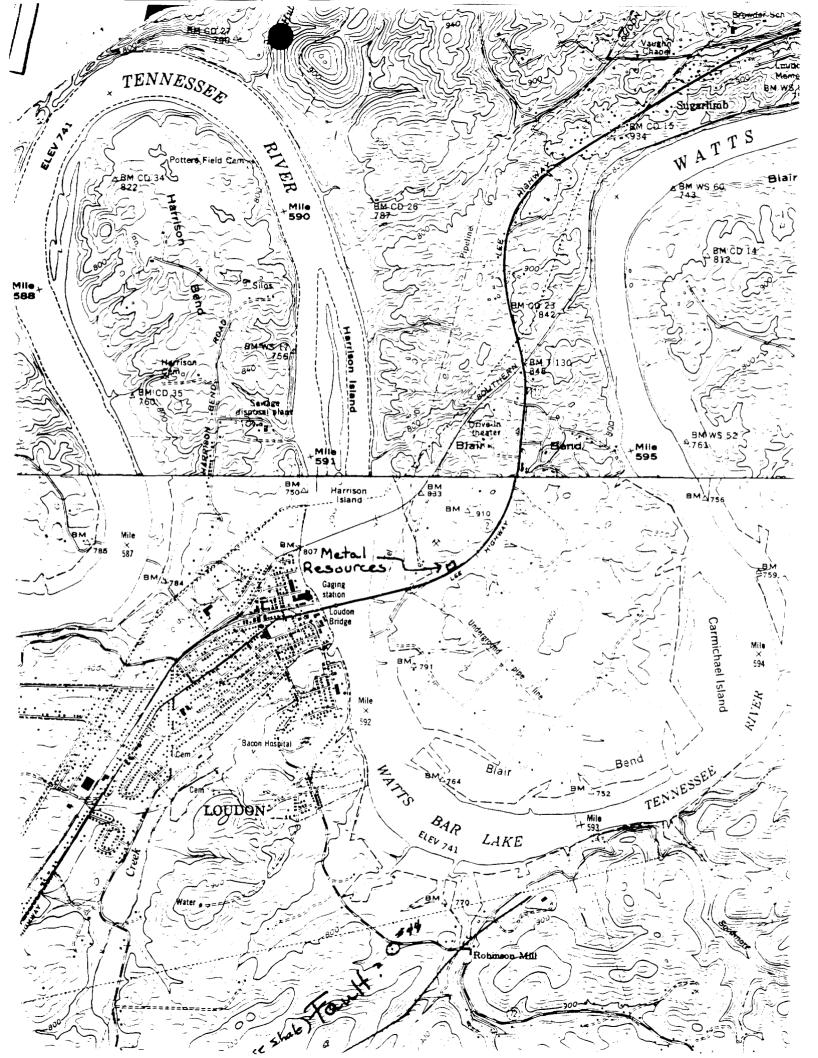
		Permeability, k*			ydraulic conductivity, K		
	cm-	ft ²	darcv	m·s	ft:s	U.S. gal/day/ft?	
cm <sup>2</sup>	ı	1.08 - 10-3	1.01 108	9.80 102	3.22 - 103	1.85 - 10°	
ft <sup>2</sup>	$9.29 \times 10^{2}$	1	9.42 1010	9.11 - 105	2.99 10%	1.71 - 1012	
darcy	$9.87 \times 10^{-9}$	1.06 - 10-11	1	9.66 10-6	3.17 × 10-5	$1.82 \times 10^{1}$	
m s	$1.02 \times 10^{-3}$	1.10 - 10-6	1.04 - 104	1	3.28	2.12 - 106	
ft s	3.11 × 10-4	3.35 - 10-	3.15 - 104	$3.05 \times 10^{-1}$	1	$6.46 \times 10^{5}$	
U.S gal da	y ft <sup>2</sup> 5.42 × 10 <sup>-10</sup>	5.83 - 10-13	5.49 10-3	4.72 - 10-7	1.55 10-6	1	

<sup>\*</sup>To obtain k in ft<sup>2</sup>, multiply k in cm<sup>2</sup> by  $1.08 \times 10^{-3}$ .

PLSO Chriks MANUAL

#### CERCLA ELIGIBILITY QUESTIONNAIRE

Site N	ame: MITHL RESONNES, INC.			
		ate:	TENNISSEE	
EPA IC	Number: 7MD 99 12 7 9 7 4 6			
i. CE	ERCLA ELIGIBILITY		<u>Yes</u>	<u>No</u>
Di	id the facility cease operations prior to November 19, 1980?			$\checkmark$
If	answer YES, STOP, facility is probably a CERCLA site.			
If	answer NO, Continue to Part II.			
11. RC	CRA ELIGIBILITY		Yes	<u>No</u>
	id the facility file a RCRA Part A application? YES:		_	
''	<ol> <li>Does *': a facility currently have interim status?</li> <li>Did the facility withdraw its Part A application?</li> <li>Is the facility a known or possible protective filer?</li> </ol>		<del>-</del>	7
	(facility filed in error) 4. Type of facility: Generator Transporter Recycle TSD (Treatment/Storage/Disposal)	er		_
Do	oes the facility have a RCRA operating or post closure permit	:?		
ide	the facility a late (after 11/19/80) or non-filer that has been entified by the EPA or the State? (facility did not know it eeded to file under RCRA)			
	all answers to questions in Part II are NO, STOP, the facility a CERCLA eligible site.			
	answer to #2 or #3 is YES, STOP, the facility is a CERCLA igible site.			
	answer #2 and #3 are NO and any OTHER answer is YES, site RCRA, continue to Part III.	•		
III. RC	CRA SITES ELIGIBLE FOR NPL		<u>Yes</u>	<u>No</u>
	as the facility owner filed for bankruptcy under federal or ate laws?			
	as the facility lost RCRA authorization to operate or shown obable unwillingness to carry out corrective action?			
	the facility a TSD that converted to a generator, transporter recycler facility after November 19, 1980?			



Enter the next ring distance

GEMS> 6.4

Enter the next ring distance

GEMS>

COVERAGE

COUNTY NAME

47 105 Tennessee 47 145 Tennessee

STATE COUNTY STATE NAME

Loudon Co Roane Co

CENTER POINT AT STATE : 47 Tennessee

COUNTY: 105 Loudon Co

Press RETURN key to continue...

REGION OF THE COUNTRY

Zipcode found: 37774 at a distance of 0.9 Km

STATE CITY NAME FIRSCODE LATITUDE LONGITUDE
TN LOUDON 47105 35.7417 84.3333

Press RETURN key to continue ...

CENSUS DATA

METAL RESOURCES

LATITUDE 35:44:41 LONGITUDE 84:19:26 1980 POPULATION

SECTOR KM 0.00-.400 .400-.810 .810-1.60 1.60-3.20 8.20-4.80 4.80-6.40 S 1 0  $\circ$  $\circ$ O 2222 O 5555 S 2 0  $\circ$ 0 Ö 0 Õ 0 S 3 0 O 0 0 0 0  $\circ$ 

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Press RETURN key to continue ...

STAR STATION ----

INDEX NUMBER	STATION NAME	LATITUDE DEGREE	LONGITUDE DEGREE	PERIOD OF STABILITY RECORD CLASSES	DISTANCE (km)
13891 13882 03814 03812 13877 93845	KNOXVILLE TN CHATTANOOGA/LOVELL T CORBIN KY ASHEVILLE NC BRISTOL/TRI CITY TN ANDERSON/COUNTY SC	35.8167 35.0333 36.9667 35.4333 36.4833	83.9833 85.2000 84.1333 82.5333 82.4000 82.7167		6 31.72 6112.00 6136.82 6165.43 6191.17 6201.12
03870	GREENVILLE-SPARTANBU	34.9000	82.2167		6212.81

Fress RETURN key to continue ...

U.S. SOIL DATA 

STATE : TENNESSE

LATITUDE : 35:44:41 LONGITUDE : 84:19:26

THE STATION IS INSIDE H.U. 6010201

GROUND WATER ZONE 8 RUNOFF SOIL TYPE

EROSION : 1.5560E-03
DEPTH TO GROUND WATER BETWEEN : 9.1440E+02 AND 4.5720E+03 CM/MONTH

FIELD CAPACITY FOR TOP SOIL : 7.2000E-02
EFFECTIVE POROSITY BETWEEN : 1.0000E-02 AND 1.0000E-01

SEEPAGE TO GROUNDWATER BETWEEN: 4.6330E+02 AND 9.2660E+02 CM/MONTH

DISTANCE TO DRINKING WELL : 2.6000E+04 CM

Press RETURN key to continue ...

U.S. CITY ----

FIFSCODE LATITUDE LONGITUDE STATE PLACE NAME 47105 35.7417 TN LOUDON 84.3333

Press RETURN key to continue ...

MENU: Geodata Handling Data List procedures

1. Site level retrieval of data

(SITERET) (CENSUS) 2. Access Census Data (COVERAGE) 3. Determine County Coverage

JAUCODE/SOIL locator (HUCODE) Convert to Lat/Long (LATLON) . Lookup/Examine Star Station Data (STAR) 8. Find US cities (USCITY) 9. Find Soil Survey Status of Counties (SSURVEY) Enter an option number or a procedure name (in parentheses) or a command: HELP, HELP option, BACK, CLEAR, EXIT, TUTOR GEMS> Enter an option number or a procedure name (in parentheses) or a command: HELP, HELP option, BACK, CLEAR, EXIT, TUTOR BEMS> Enter an option number or a procedure name (in parentheses) or a command: HELF, HELP option, BACK, CLEAR, EXIT, TUTOR GEMS> EXIT Type YES to confirm the EXIT command; type NO to restart GEMS GEMS> YES **\$ LOGOUT** logged out at 29-JAN-1990 13:01:17.13 WRT Itemized resource charges, for this session, follow: NODE: VAXIMI START TIME: 29-JAN-1990 12:56:10.03 FINISH TIME: 29-JAN-1990 13:01:17.13 ACCT: NTIS PROJ: MTISNUCH USER: WRT BILLING PERIOD: 900101 UIC: [000750,000112] WEEKDAY: MONDAY BAUD: TERMINAL PORT: VTA181 QUANTITY EXPENDITURE 

DESCRIPTION OF CHARGE

ALL CHARGE LEVELS

300 baud (Seconds)
CPU TIME (Seconds)

307

0.7675

చ

0.3957

TOTAL FOR THIS SESSION

事 1.164日

NODE 3157 HOST 1038: DROPPED BY HOST please log in: X

error, type user name:

# OVERSIZED DOCUMENT